



Mit-0512.ST25.txt
SEQUENCE LISTING

<110> Bear, et al.
<120> Lentiviral Vectors, Related Reagents, and Methods of Use Thereof
<130> 0492611-0512
<140> 10/655,872
<141> 2003-09-05
<160> 41
<170> PatentIn version 3.2
<210> 1
<211> 9710
<212> DNA
<213> Artificial
<220>
<223> lentiviral vector sequence
<400> 1
gtcgcacggat cgggagatct cccgatcccc tatggtgcac tctcagtaca atctgctctg 60
atgccgcata gtttaagccag tatctgctcc ctgcttggtg gttggagggtc gctgagtagt 120
gcgcgagcaa aattttaagct acaacaaggc aaggcttgac cgacaattgc atgaagaatc 180
tgcttagggg taggcgtttt gcgctgcttc gcgatgtacg ggccagatat acgcgttgac 240
attgattatt gactagttat taatagtaat caattacggg gtcattagtt catagcccat 300
atatggagtt ccgcgttaca taacttacgg taaatggccc gcctggctga ccgccaacg 360
acccccgccc attgacgtca ataatgacgt atgttcccat agtaacgcca atagggactt 420
tccattgacg tcaatgggtg gagtatctac ggtaaaactgc ccacttggca gtacatcaag 480
tgtatcatat gccaaagtacg cccctatttg acgtcaatga cggtaaatgg cccgcctggc 540
attatgcca gtacatgacc ttatgggact ttcctacttg gcagtacatc tacgtattag 600
tcacgctat taccatgggtg atgcggtttt ggcagtacat caatgggcgt ggatagcggg 660
ttgactcacg gggatttcca agtctccacc ccattgacgt caatgggagt ttgttttggc 720
acaaaaatca acgggacttt ccaaaatgtc gtaacaactc cgccccattg acgcaaatgg 780
gcggtaggcg tgtacgggtg gaggtctata taagcagcgc gttttgcctg tactgggtct 840
ctctgggttag accagatctg agcctgggag ctctctggct aactagggaa cccactgctt 900
aagcctcaat aaagcttgcc ttgagtgtt caagtagtgt gtgcccgtct gttgtgtgac 960
tctggtaact agagatccct cagacccttt tagtcagtgt ggaaaatctc tagcagtggc 1020
gcccgaacag ggacttgaaa gcgaaaggga aaccagagga gctctctcga cgcaggactc 1080
ggcttgctga agcgcgcacg gcaagaggcg aggggcggcg actggtgagt acgcaaaaaa 1140
ttttgactag cggaggctag aaggagagag atgggtgcca gagcgtcagt attaagcggg 1200

Mit-0512.ST25.txt

ggagaattag	atcgcgatgg	gaaaaaattc	ggttaaggcc	aggggggaaag	aaaaaatata	1260
aattaaaaca	tatagtatgg	gcaagcaggg	agctagaacg	attcgagtt	aatcctggcc	1320
tgtagaaac	atcagaaggc	tgtagacaaa	tactgggaca	gctacaacca	tcccttcaga	1380
caggatcaga	agaacttaga	tcattatata	atacagtagc	aaccctctat	tgtgtgcatc	1440
aaaggataga	gataaaagac	accaaggaag	ctttagacaa	gatagaggaa	gagcaaaaca	1500
aaagtaagac	caccgcacag	caagcggccg	ctgatcttca	gacctggagg	aggagatatg	1560
agggacaatt	ggagaagtga	attatataaa	tataaagtag	taaaaattga	accattagga	1620
gtagcaccca	ccaaggcaaa	gagaagagtg	gtgcagagag	aaaaaagagc	agtgggaata	1680
ggagctttgt	tccttggggt	cttgggagca	gcaggaagca	ctatgggagc	agcgtcaatg	1740
acgctgacgg	tacaggccag	acaattattg	tctggtatag	tgacgagca	gaacaatttg	1800
ctgagggcta	ttgaggcgca	acagcatctg	ttgcaactca	cagtctgggg	catcaagcag	1860
ctccaggcaa	gaatcctggc	tgtggaaaga	tacctaaagg	atcaacagct	cctgggggatt	1920
tgggggttgct	ctggaaaact	catttgcacc	actgctgtgc	cttggaatgc	tagttggagt	1980
aataaatctc	tggaacagat	ttggaatcac	acgacctgga	tggagtggga	cagagaaatt	2040
aacaattaca	caagcttaat	acactcctta	attgaagaat	cgcaaaacca	gcaagaaaag	2100
aatgaacaag	aattattgga	attagataaa	tgggcaagtt	tgtggaattg	gtttaacata	2160
acaaattggc	tgtggtatat	aaaattattc	ataatgatag	taggaggctt	ggtaggttta	2220
agaatagttt	ttgctgtact	ttctatagtg	aatagagtta	ggcagggata	ttcaccatta	2280
tcgtttcaga	cccacctccc	aaccccgagg	ggacccgaca	ggcccgaagg	aatagaagaa	2340
gaaggtggag	agagagacag	agacagatcc	attcgattag	tgaacggatc	ggcactgcgt	2400
gcgccaattc	tgacagacaa	tggcagtatt	catccacaat	tttaaaagaa	aaggggggat	2460
tggggggtac	agtgcagggg	aaagaatagt	agacataata	gcaacagaca	tacaaactaa	2520
agaattacaa	aaacaaatta	caaaaattca	aaattttcgg	gtttattaca	gggacagcag	2580
agatccagtt	tggttaatta	actgcaggaa	tctagttatt	aatagtaatc	aattacgggg	2640
tcattagttc	atagcccata	tatggagttc	cgcgttacat	aacttacggt	aaatggcccg	2700
cctggctgac	cgcccaacga	cccccgccca	ttgacgtcaa	taatgacgta	tgttcccata	2760
gtaacgcaa	tagggacttt	ccattgacgt	caatgggtgg	agtattttacg	gtaaaactgcc	2820
cacttggcag	tacatcaagt	gtatcatatg	ccaagtacgc	cccctattga	cgtcaatgac	2880
ggtaaatggc	ccgcctggca	ttatgcccag	tacatgacct	tatgggactt	tcctacttgg	2940
cagtacatct	acgtattagt	catcgctatt	accatgggtcg	aggtgagccc	cacgttctgc	3000
ttcactctcc	ccatctcccc	cccctcccca	cccccaattt	tgtattttatt	tatttttttaa	3060

Mit-0512.ST25.txt

ttatattgtg	cagcgatggg	ggcggggggg	gggggggggc	gcgcgccagg	cggggcgggg	3120
cggggagagg	ggcggggcgg	ggcgaggcgg	agagggtgcg	cggcagccaa	tcagagcggc	3180
gcgctccgaa	agtttccttt	tatggcgagg	cggcggcggc	ggcggcccta	taaaaagcga	3240
agcgcgcggc	gggcggggag	tcgctgcgac	gctgccttcg	ccccgtgccc	cgctccgccc	3300
ccgcctcgcg	ccgcccggcc	cggctctgac	tgaccgcgtt	actcccacag	gtgagcgggc	3360
gggacggccc	ttctcctccg	ggctgtaatt	agcgcttggt	ttaatgacgg	cttgtttctt	3420
ttctgtggct	gcgtgaaagc	cttgaggggc	tccgggaggg	ccctttgtgc	ggggggagcg	3480
gctcgggggg	tgcggtgcgt	tgtgtgtgcg	tggggagcgc	cgcggtgcgg	tccgcgctgc	3540
ccggcgggct	tgagcgctgc	gggcgcggcg	cggggccttg	tgcgctccgc	agtgtgcgcg	3600
aggggagcgc	ggccgggggc	ggtgccccgc	ggtgcggggg	gggctgcgag	gggaacaaag	3660
gctgcgtgcg	gggtgtgtgc	gtgggggggt	gagcaggggg	tgtgggcgcg	tcggtcgggc	3720
tgcaaccccc	cctgcacccc	cctccccgag	ttgctgagca	cgccccggct	tcgggtgcgg	3780
ggctccgtac	ggggcggtgc	gcggggctcg	ccgtgccggg	cggggggtgg	cggcaggtgg	3840
gggtgccggg	cggggcgggg	ccgcctcggg	ccggggaggg	ctcgggggag	gggcgcggcg	3900
gcccccgagg	cgccggcggc	tgtcgaggcg	cggcgagccg	cagccattgc	cttttatggt	3960
aatcgtgcga	gagggcgag	ggacttcctt	tgtcccaa	ctgtgcggag	ccgaaatctg	4020
ggaggcgccg	ccgcaccccc	tctagcgggc	gcggggcgaa	gcggtgcggc	gccggcagga	4080
aggaaatggg	cggggagggc	cttcgtgcgt	cgccgcgccc	ccgtccccct	ctccctctcc	4140
agcctcgggg	ctgtccgcgg	ggggacggct	gccttcgggg	gggacggggc	agggcggggg	4200
tcggcttctg	gcgtgtgacc	ggcggctcta	gagcctctgc	taaccatggt	catgccttct	4260
tctttttcct	acagctcctg	ggcaacgtgc	tggttattgt	gctgtctcat	cattttggca	4320
aagaattgat	ttgataccgc	gggcccggga	tccccgggta	ccggtcgcca	ccatggtgag	4380
caagggcgag	gagctgttca	ccgggggtgg	gcccatacct	gtcgagctgg	acggcgacgt	4440
aaacggccac	aagtccagcg	tgtccggcga	gggcgagggc	gatgccacct	acggcaagct	4500
gaccctgaag	ttcatctgca	ccaccggcaa	gctgcccgtg	ccctggccca	ccctcgtgac	4560
caccctgacc	tacggcgtgc	agtgcctcag	ccgctacccc	gaccacatga	agcagcacga	4620
cttcttcaag	tccgccatgc	ccgaaggcta	cgtccaggag	cgaccatctt	tcttcaagga	4680
cgacggcaac	tacaagaccc	gcgccgaggt	gaagtccgag	ggcgacaccc	tggtgaaccg	4740
catcgagctg	aagggcacgc	acttcaagga	ggacggcaac	atcctggggc	acaagctgga	4800
gtacaactac	aacagccaca	acgtctatat	catggccgac	aagcagaaga	acggcatcaa	4860
ggtgaacttc	aagatccgcc	acaacatcga	ggacggcagc	gtgcagctcg	ccgaccacta	4920
ccagcagaac	acccccatcg	gcgacggccc	cggtgtgctg	cccgacaacc	actacctgag	4980

Mit-0512.ST25.txt

cacccagtcc gccctgagca aagaccccaa cgagaagcgc gatcacatgg tcctgctgga	5040
gttcgtgacc gccgccggga tcaactctcg catggacgag ctgtacaagt aaagcggccg	5100
cgactctaga attcgatatc aagcttatcg ataatcaacc tctggattac aaaatttggtg	5160
aaagattgac tggatattctt aactatgttg ctcccttttac gctatgtgga tacgctgctt	5220
taatgccttt gtatcatgct attgtctccc gtatggcttt cttttctcc tccttgata	5280
aatcctgggt gctgtctctt tatgaggagt tgtggcccg tgtcaggcaa cgtggcgtgg	5340
tgtgcactgt gtttgctgac gcaaccccca ctggttgggg cattgccacc acctgtcagc	5400
tcctttccgg gactttcgct tccccctcc ctattgccac ggcggaactc atcgccgctt	5460
gccttgcccg ctgctggaca ggggctcggc tgttgggcac tgacaattcc gtggtgttgt	5520
cggggaaatc atcgtccttt ccttggtgctc tcgcctgtgt tgccacctgg attctgcgcg	5580
ggacgtcctt ctgctacgtc ccttcggccc tcaatccagc ggaccttcct tcccgcgcc	5640
tgtcgccggc tctgcggcct cttccgcgtc ttcgccttcg ccctcagacg agtcggatct	5700
ccctttgggc cgcctccccg catcgatacc gtcgacctg agacctagaa aaacatggag	5760
caatcacaag tagcaataca gcagctacca atgctgattg tgcttggtta gaagcacaag	5820
aggaggagga ggtgggtttt ccagtcacac ctcagggtacc ttttaagacca atgacttaca	5880
aggcagctgt agatcttagc cactttttaa aagaaaaggg gggactggaa gggctaattc	5940
actcccaacg aagacaagat atccttgatc tgtggatcta ccacacacaa ggctacttcc	6000
ctgattggca gaactacaca ccagggccag ggatcagata tccactgacc tttggatggt	6060
gctacaagct agtaccagtt gagcaagaga aggtagaaga agccaatgaa ggagagaaca	6120
cccgtttgtt acaccctgtg agcctgcatg ggatggatga cccggagaga gaagtattag	6180
agtggagggt tgacagccgc ctagcatttc atcacatggc ccgagagctg catccggact	6240
gtactgggtc tctctggtta gaccagatct gagcctggga gctctctggc taactagga	6300
accactgct taagcctcaa taaagcttgc cttgagtgtc tcaagtagtg tgtgcccgtc	6360
tgttggtgta ctctggtaac tagagatccc tcagaccctt ttagtcagtg tggaaaatct	6420
ctagcagggc ccgtttaaac ccgtgatca gcctcgactg tgccttctag ttgccagcca	6480
tctgttgttt gcccctcccc cgtgccttcc ttgaccctgg aagggtgccac tcccactgtc	6540
ctttcctaataaaaatgagga aattgcatcg cattgtctga gtaggtgtca ttctattctg	6600
gggggtgggg tggggcagga cagcaagggg gaggattggg aagacaatag caggcatgct	6660
ggggatgcgg tgggtcttat ggcttctgag gcggaaagaa ccagctgggg ctctaggggg	6720
tatccccacg cgccctgtag cggcgcatta agcgcggcgg gtgtggtggt tacgcgcagc	6780
gtgaccgcta cacttgccag cgccctagcg cccgctcctt tcgctttctt cccttccttt	6840

Mit-0512.ST25.txt

ctcgccacgt	tcgccggctt	tccccgtcaa	gctctaaadc	gggggctccc	tttagggttc	6900
cgatttagtg	ctttacggca	cctcgacccc	aaaaaacttg	attaggggtga	tggttcacgt	6960
agtgggccat	cgccctgata	gacggttttt	cgccctttga	cgttggagtc	cacgttcttt	7020
aatagtggac	tcttgttcca	aactggaaca	acactcaacc	ctatctcggg	ctattctttt	7080
gatttataag	ggattttgcc	gatttcggcc	tattgggttaa	aaaatgagct	gatttaacaa	7140
aaatttaacg	cgaattaatt	ctgtggaatg	tgtgtcagtt	aggggtgtgga	aagtccccag	7200
gctccccagc	aggcagaagt	atgcaaagca	tgcactctca	ttagtcagca	accagggtgtg	7260
gaaagtcccc	aggctcccca	gcaggcagaa	gtatgcaaag	catgcatctc	aattagtcag	7320
caaccatagt	cccgcctcta	actccgcccc	tcccgccctt	aactccgccc	agttccgccc	7380
atttctccgc	ccatggctga	ctaatttttt	ttatttatgc	agaggccgag	gccgcctctg	7440
cctctgagct	attccagaag	tagtgaggag	gcttttttgg	aggcctaggc	ttttgcaaaa	7500
agctccccgg	agcttgata	tccatttttc	gatctgatca	gcacgtgttg	acaattaatc	7560
atcggcatag	tatatcgga	tagtataata	cgacaagggt	aggaactaaa	ccatggccaa	7620
gttgaccagt	gccgttccgg	tgctcaccgc	gcgcgacgtc	gccggagcgg	tcgagttctg	7680
gaccgaccgg	ctcgggttct	cccgggactt	cgtggaggac	gacttcgccc	gtgtgggtccg	7740
ggacgacgtg	accctgttca	tcagcgcggg	ccaggaccag	gtggtgccgg	acaacaccct	7800
ggcctgggtg	tgggtgcgcg	gcctggacga	gctgtacgcc	gagtgggtcgg	aggtcgtgtc	7860
cacgaacttc	cgggacgcct	ccggggccgg	catgaccgag	atcggcgagc	agccgtgggg	7920
gcgggagttc	gccctgcgcg	acccggccgg	caactgcgtg	cacttcgtgg	ccgaggagca	7980
ggactgacac	gtgctacgag	atttcgattc	caccgcccgc	ttctatgaaa	ggttgggctt	8040
cggaatcggt	ttccgggacg	ccggctggat	gatcctccag	cgcggggatc	tcatgctgga	8100
gttcttcgcc	cacccaact	tgtttattgc	agcttataat	ggttacaaat	aaagcaatag	8160
catcacaat	ttcacaata	aagcattttt	ttcactgcat	tctagttgtg	gtttgtccaa	8220
actcatcaat	gtatcttata	atgtctgtat	accgtcgacc	tctagctaga	gcttggcgta	8280
atcatggtca	tagctgtttc	ctgtgtgaaa	ttgttatccg	ctcacaattc	cacacaacat	8340
acgagccgga	agcataaagt	gtaaagcctg	gggtgcctaa	tgagtgtgct	aactcacatt	8400
aattgctgtg	cgctcactgc	ccgctttcca	gtcgggaaac	ctgtcgtgcc	agctgcatta	8460
atgaatcggc	caacgcgcgg	ggagaggcgg	tttgctgatt	gggcgctctt	ccgcttcctc	8520
gctcactgac	tcgctgcgct	cggtcgttcg	gctgcggcga	gcggtatcag	ctcactcaaa	8580
ggcggtaata	cggttatcca	cagaatcagg	ggataacgca	ggaaagaaca	tgtgagcaaa	8640
aggccagcaa	aaggccagga	accgtaaaaa	ggccgcgttg	ctggcgtttt	tccataggct	8700
ccgccccctt	gacgagcatc	acaaaaatcg	acgctcaagt	cagagggtggc	gaaacccgac	8760

Mit-0512.ST25.txt

```

aggactataa agataccagg cgtttccccc tggaagctcc ctcgtgcgct ctcctgttcc 8820
gaccctgccg cttaccggat acctgtccgc ctttctccct tcgggaagcg tggcgctttc 8880
tcatagctca cgctgtaggt atctcagttc ggtgtaggtc gttcgctcca agctgggctg 8940
tgtgcacgaa cccccgttc agcccgaccg ctgcgcccta tccggtaact atcgtcttga 9000
gtccaacccg gtaagacacg acttatcgcc actggcagca gccactggta acaggattag 9060
cagagcgagg tatgtaggcg gtgctacaga gttcttgaag tggtagccta actacggcta 9120
cactagaaga acagtatttg gtatctgctc tctgctgaag ccagttacct tcggaaaaag 9180
agttggtagc tcttgatccg gcaaacaac caccgctggt agcgggtggt tttttgtttg 9240
caagcagcag attacgcgca gaaaaaagg atctcaagaa gatcctttga tcttttctac 9300
ggggtctgac gctcagtggg acgaaaactc acgttaaggg attttgggtca tgagattatc 9360
aaaaaggatc ttcacctaga tcctttttaa ttaaaaatga agttttaaat caatctaaag 9420
tatatatgag taaacttggg ctgacagtta ccaatgctta atcagtgagg cacctatctc 9480
agcgatctgt ctatttcgtt catccatagt tgcctgactc cccgtcgtgt agataactac 9540
gatacgggag ggcttaccat ctggccccag tgctgcaatg ataccgcgag acccacgctc 9600
accggctcca gatttatcag caataaacca gccagccgga agggccgagc gcagaagtgg 9660
tcctgcaact ttatccgcct ccatccagtc tattaattgt tgccgggaag 9710

```

```

<210> 2
<211> 6027
<212> DNA
<213> Artificial

```

```

<220>
<223> lentiviral vector sequence

```

```

<400> 2
gtcgacggat cgggagatct cccgatcccc tatggtgcac tctcagtaca atctgctctg 60
atgccgcata gttaagccag tatctgctcc ctgcttggtg gttggagggtc gctgagtagt 120
gcgcgagcaa aatttaagct acaacaaggc aaggcttgac cgacaattgc atgaagaatc 180
tgcttagggg taggcgtttt gcgctgcttc gcgatgtacg ggccagatat acgcgttgac 240
attgattatt gactagttat taatagtaat caattacggg gtcattagtt catagcccat 300
atatggagtt ccgcgttaca taacttacgg taaatggccc gcctggctga ccgccaacg 360
acccccgcc attgacgtca ataatgacgt atgttcccat agtaacgcc aatagggactt 420
tccattgacg tcaatgggtg gagtatttac ggtaaactgc ccacttgga gtacatcaag 480
tgtatcatat gccaaagtac cccctattg acgtcaatga cggtaaatgg cccgcctggc 540
attatgccca gtacatgacc ttatgggact ttcctacttg gcagtacatc tacgtattag 600

```

Mit-0512.ST25.txt

tcatcgctat	taccatggtg	atgcggtttt	ggcagtagcat	caatgggcgt	ggatagcgg	660
ttgactcacg	gggatttcca	agtctccacc	ccattgacgt	caatgggagt	ttgttttggc	720
acaaaaatca	acgggacttt	ccaaaatgtc	gtaacaactc	cgccccattg	acgcaaattg	780
gcggtaggcg	tgtacggtgg	gaggtctata	taagcagcgc	gttttgccctg	tactgggtct	840
ctctggtttag	accagatctg	agcctgggag	ctctctggct	aactagggaa	cccactgctt	900
aagcctcaat	aaagcttgcc	ttgagtgtct	caagtagtgt	gtgcccgtct	gttgtgtgac	960
tctggtaact	agagatccct	cagacccttt	tagtcagtgt	ggaaaatctc	tagcagtggc	1020
gcccgaacag	ggacttgaaa	gcgaaaggga	aaccagagga	gctctctcga	cgcaggactc	1080
ggcttgctga	agcgcgcacg	gcaagaggcg	aggggcggcg	actggtgagt	acgccaaaaa	1140
ttttgactag	cggaggctag	aaggagagag	atgggtgcga	gagcgtcagt	attaagcggg	1200
ggagaattag	atcgcgatgg	gaaaaaattc	ggttaaggcc	agggggaaag	aaaaaatata	1260
aattaaaaca	tatagtattg	gcaagcaggg	agctagaacg	attcgcagt	aatcctggcc	1320
tgtagaaaac	atcagaaggc	tgtagacaaa	tactgggaca	gctacaacca	tcccttcaga	1380
caggatcaga	agaacttaga	tcattatata	atacagtagc	aaccctctat	tgtgtgcatc	1440
aaaggataga	gataaaagac	accaaggaag	ctttagacaa	gatagaggaa	gagcaaaaaca	1500
aaagtaagac	caccgcacag	caagcggccg	gccgcgctga	tcttcagacc	tggaggagga	1560
gatatgaggg	acaattggag	aagtgaatta	tataaatata	aagtagtaaa	aattgaacca	1620
ttaggagtag	caccaccaa	ggcaaagaga	agagtgggtg	agagagaaaa	aagagcagt	1680
ggaataggag	ctttgttctt	tgggttcttg	ggagcagcag	gaagcactat	gggcgcagcg	1740
tcaatgacgc	tgacggtaca	ggccagacaa	ttattgtctg	gtatagtgca	gcagcagaac	1800
aatttgctga	gggctattga	ggcgcaacag	catctgttgc	aactcacagt	ctggggcatc	1860
aagcagctcc	aggcaagaat	cctggctgtg	gaaagatacc	taaaggatca	acagctcctg	1920
gggatttggg	gttgctctgg	aaaactcatt	tgcaccactg	ctgtgccttg	gaatgctagt	1980
tggagtaata	aatctctgga	acagatttgg	aatcacacga	cctggatgga	gtgggacaga	2040
gaaattaaca	attacacaag	cttaatacac	tccttaattg	aagaatcgca	aaaccagcaa	2100
gaaaagaatg	aacaagaatt	attggaatta	gataaatggg	caagtttgtg	gaattggttt	2160
aacataacaa	attggctgtg	gtatataaaa	ttattcataa	tgatagtagg	aggcttggtg	2220
ggtttaagaa	tagtttttgc	tgtactttct	atagtgaata	gagttaggca	gggatattca	2280
ccattatcgt	ttcagaccca	cctcccaacc	ccgaggggac	ccgacaggcc	cgaaggaata	2340
gaagaagaag	gtggagagag	agacagagac	agatccattc	gattagtga	cggatcggca	2400
ctgcgtgcgc	caattctgca	gacaaatggc	agtattcatc	cacaatttta	aaagaaaagg	2460
ggggattggg	gggtacagt	caggggaaag	aatagtagac	ataatagcaa	cagacataca	2520

Mit-0512.ST25.txt

aactaaagaa	ttacaaaaac	aaattacaaa	aattcaaaat	tttcgggttt	attacagggg	2580
cagcagagat	ccagtttggt	tagtaccggg	cccgtcttag	acggttaacg	cgctagccgt	2640
taattaagcc	tcgaggtcga	cggtatcgat	aagctcgctt	cacgagattc	cagcaggtcg	2700
agggacctaa	taacttcgta	tagcatacat	tatacgaagt	tatattaagg	gttccaagct	2760
taagcggccg	ccgatgcatg	ccccgggatg	gcgcgccatg	gatccgcgaa	ttcgtcgagg	2820
gacctaat	cttcgtatag	catacattat	acgaagttat	acatgtttta	gggttccggt	2880
tccactaggt	acaattcgat	atcaagctta	tcgataatca	acctctggat	tacaaaattt	2940
gtgaaagatt	gactggtatt	cttaactatg	ttgctccttt	tacgctatgt	ggatacgctg	3000
ctttaatgcc	tttgtatcat	gctattgctt	cccgtatggc	tttcattttc	tcctccttgt	3060
ataaatcctg	gttgctgtct	ctttatgagg	agttgtggcc	cgttgtcagg	caacgtggcg	3120
tggtgtgcac	tgtgtttgct	gacgcaaccc	ccactggttg	gggcattgcc	accacctgtc	3180
agctcctttc	cgggactttc	gctttccccc	tccctattgc	cacggcggaa	ctcatcgccg	3240
cctgccttgc	ccgctgctgg	acaggggctc	ggctgttggg	cactgacaat	tccgtggtgt	3300
tgtcggggaa	atcatcgctc	tttccttggc	tgtcgcctg	tgttgccacc	tggattctgc	3360
gcgggacgtc	cttctgctac	gtcccttcgg	ccctcaatcc	agcggacctt	ccttcccgcg	3420
gcctgctgcc	ggctctgcgg	cctcttcgcg	gtcttcgcct	tcgccctcag	acgagtcgga	3480
tctccctttg	ggccgcctcc	ccgcatcgat	accgtcgacc	tcgatcgaga	cctagaaaaa	3540
catggagcaa	tcacaagtag	caatacagca	gctaccaatg	ctgattgtgc	ctggctagaa	3600
gcacaagagg	aggaggaggt	gggttttcca	gtcacacctc	aggtaccttt	aagaccaatg	3660
acttacaagg	cagctgtaga	tcttagccac	tttttaaaag	aaaagggggg	actggaaggg	3720
ctaattcact	cccaacgaag	acaagatatc	cttgatctgt	ggatctacca	cacacaaggc	3780
tacttccctg	attggcagaa	ctacacacca	gggccaggga	tcagatatcc	actgaccttt	3840
ggatggtgct	acaagctagt	accagttgag	caagagaagg	tagaagaagc	caatgaagga	3900
gagaacaccc	gcttgttaca	ccctgtgagc	ctgcatggga	tggatgaccc	ggagagagaa	3960
gtattagagt	ggaggtttga	cagccgccta	gcatttcatc	acatggcccc	agagctgcat	4020
ccggactgta	ctgggtctct	ctgggttagac	cagatctgag	cctgggagct	ctctgggctaa	4080
ctaggaacc	cactgcttaa	gcctcaataa	agcttgcctt	gagtgttca	agtagtgtgt	4140
gcccgtctgt	tgtgtgactc	tggttaactag	agatccctca	gaccctttta	gtcagtgtgg	4200
aaaatctcta	gcagcatgtg	agcaaaaagg	cagcaaaaagg	ccaggaaccg	taaaaaggcc	4260
gcgttgctgg	cgttttttcca	taggctccgc	ccccctgacg	agcatcacia	aaatcgacgc	4320
tcaagtcaga	ggtggcgaaa	cccgcacagga	ctataaagat	accaggcggt	tccccctgga	4380

Mit-0512.ST25.txt

agctccctcg	tgcgctctcc	tgttccgacc	ctgccgctta	ccggatacct	gtccgccttt	4440
ctcccttcgg	gaagcgtggc	gctttctcat	agctcacgct	gtaggtatct	cagttcgggtg	4500
taggtcgttc	gctccaagct	gggctgtgtg	cacgaacccc	ccgttcagcc	cgaccgctgc	4560
gccttatccg	gtaactatcg	tcttgagtcc	aacccggtaa	gacacgactt	atcgccactg	4620
gcagcagcca	ctggtaacag	gatttagcaga	gcgaggtatg	taggcgggtgc	tacagagttc	4680
ttgaagtggg	ggcctaacta	cggctacact	agaagaacag	tatttggtat	ctgcgctctg	4740
ctgaagccag	ttaccttcgg	aaaaagagtt	ggtagctctt	gatccggcaa	acaaaccacc	4800
gctggtagcg	gtgggtttttt	tgtttgcaag	cagcagatta	cgcgagaaa	aaaaggatct	4860
caagaagatc	ctttgatctt	ttctacgggg	tctgacgctc	agtggaacga	aaactcacgt	4920
taagggattt	tggatcatgag	attatcaaaa	aggatcttca	cctagatcct	tttaaattaa	4980
aatgaagt	ttaaatcaat	ctaaagtata	tatgagtaaa	cttgggtctga	cagttaccaa	5040
tgcttaatca	gtgaggcacc	tatctcagcg	atctgtctat	ttcgttcatc	catagttgcc	5100
tgactccccg	tcgtgtagat	aactacgata	cgggagggct	taccatctgg	ccccagtgtc	5160
gcaatgatac	cgcgagaccc	acgctcaccg	gctccagatt	tatcagcaat	aaaccagcca	5220
gccggaaggg	ccgagcgcag	aagtggtcct	gcaactttat	ccgcctccat	ccagtctatt	5280
aattgttgcc	gggaagctag	agtaagtagt	tcgccagtta	atagtttgcg	caacgttggt	5340
gccattgcta	caggcatcgt	gggtgtcacgc	tcgtcgtttg	gtatggcttc	attcagctcc	5400
ggttcccaac	gatcaaggcg	agttacatga	ttcccatgt	tgtgcaaaaa	agcggtagc	5460
tccttcggtc	ctccgatcgt	tgtcagaagt	aagttggccg	cagtgttatc	actcatggtt	5520
atggcagcac	tgcataattc	tcttactgtc	atgccatccg	taagatgctt	ttctgtgact	5580
ggtagtact	caaccaagtc	attctgagaa	tagtgtatgc	ggcgaccgag	ttgctcttgc	5640
ccggcgtcaa	tacgggataa	taccgcgcca	catagcagaa	ctttaaaagt	gctcatcatt	5700
ggaaaacgtt	cttcggggcg	aaaactctca	aggatcttac	cgctgttgag	atccagttcg	5760
atgtaacca	ctcgtgcacc	caactgatct	tcagcatctt	ttactttcac	cagcgtttct	5820
gggtgagcaa	aaacaggaag	gcaaaatgcc	gcaaaaaagg	gaataagggc	gacacggaaa	5880
tgttgaatac	tcatactctt	cctttttcaa	tattattgaa	gcatttatca	gggttattgt	5940
ctcatgagcg	gatacatatt	tgaatgtatt	tagaaaaata	aacaaatagg	ggttccgcgc	6000
acatttcccc	gaaaagtgcc	acctgac				6027

<210> 3
 <211> 6748
 <212> DNA
 <213> Artificial

<220>

<223> lentiviral vector sequence

<400> 3

```

gtcgacggat cgggagatct cccgatcccc tatggtgcac tctcagtaca atctgctctg    60
atgccgcata gttaagccag tatctgctcc ctgcttggtg gttggagggtc gctgagtagt    120
gcgcgagcaa aatttaagct acaacaaggc aaggcttgac cgacaattgc atgaagaatc    180
tgcttagggg taggcgtttt gcgctgcttc gcgatgtacg ggccagatat acgcggttgac    240
attgattatt gactagttat taatagtaat caattacggg gtcattagtt catagcccat    300
atatggagtt ccgcgttaca taacttacgg taaatggccc gcctggctga ccgccaacg    360
acccccgccc attgacgtca ataatgacgt atgttcccat agtaacgcca atagggactt    420
tccattgacg tcaatgggtg gagtatttac ggtaaactgc ccacttgga gtacatcaag    480
tgtatcatat gccaaagtacg ccccctattg acgtcaatga cggtaaatgg cccgcctggc    540
attatgcca gtacatgacc ttatgggact ttcctacttg gcagtacatc tacgtattag    600
tcatcgctat taccatggtg atgcggtttt ggcagtacat caatgggcgt ggatagcggg    660
ttgactcacg gggatttcca agtctccacc ccattgacgt caatgggagt ttgttttggc    720
acaaaaatca acgggacttt ccaaaatgtc gtaacaactc cgccccattg acgcaaattg    780
gcggtaggcg tgtacggtgg gaggtctata taagcagcgc gttttgcctg tactgggtct    840
ctctggttag accagatctg agcctgggag ctctctggct aactagggaa cccactgctt    900
aagcctcaat aaagcttgcc ttgagtgtt caagtagtgt gtgcccgtct gttgtgtgac    960
tctggtaact agagatccct cagacccttt tagtcagtgt ggaaaatctc tagcagtggc   1020
gcccgaacag ggacttgaaa gcgaaaggga aaccagagga gctctctcga cgcaggactc   1080
ggcttgctga agcgcgcacg gcaagaggcg aggggcggcg actggtgagt acgcaaaaaa   1140
ttttgactag cggaggctag aaggagagag atgggtgcga gagcgtcagt attaagcggg   1200
ggagaattag atcgcgatgg gaaaaaattc ggttaaggcc agggggaaaag aaaaaatata   1260
aattaaaaca tatagtatgg gcaagcaggg agctagaacg attcgcagtt aatcctggcc   1320
tgttagaaac atcagaaggc tgtagacaaa tactgggaca gctacaacca tcccttcaga   1380
caggatcaga agaacttaga tcattatata atacagtagc aaccctctat tgtgtgcatc   1440
aaaggataga gataaaagac accaaggaag ctttagacaa gatagaggaa gagcaaaaca   1500
aaagtaagac caccgcacag caagcggccg gccgcgctga tcttcagacc tggaggagga   1560
gatatgaggg acaattggag aagtgaatta tataaatata aagtagtaaa aattgaacca   1620
ttaggagtag caccaccaa ggcaaagaga agagtgggtc agagagaaaa aagagcagtg   1680
ggaataggag ctttgttcct tgggttcctt ggagcagcag gaagcactat gggcgcagcg   1740
tcaatgacgc tgacggtaca ggccagacaa ttattgtctg gtatagtgca gcagcagaac   1800

```

Mit-0512.ST25.txt

aatttgctga	gggctattga	ggcgcaacag	catctgttgc	aactcacagt	ctggggcatc	1860
aagcagctcc	aggcaagaat	cctggctgtg	gaaagatacc	taaaggatca	acagctcctg	1920
gggatttggg	gttgctctgg	aaaactcatt	tgcaccactg	ctgtgccttg	gaatgctagt	1980
tggagtaata	aatctctgga	acagatttgg	aatcacacga	cctggatgga	gtgggacaga	2040
gaaattaaca	attacacaag	cttaatacac	tccttaattg	agaatcgca	aaaccagcaa	2100
gaaaagaatg	aacaagaatt	attggaatta	gataaatggg	caagtttgtg	gaattggttt	2160
aacataacaa	attggctgtg	gtatataaaa	ttattcataa	tgatagtagg	aggcttggtg	2220
ggtttaagaa	tagtttttgc	tgtactttct	atagtgaata	gagttaggca	gggatattca	2280
ccattatcgt	ttcagaccca	cctcccaacc	ccgaggggac	ccgacaggcc	cgaagggaata	2340
gaagaagaag	gtggagagag	agacagagac	agatccattc	gattagtga	cggatcggca	2400
ctgcgtgcgc	caattctgca	gacaaatggc	agtattcatc	cacaatttta	aaagaaaagg	2460
ggggattggg	gggtacagtg	caggggaaag	aatagtagac	ataatagcaa	cagacataca	2520
aactaaagaa	ttacaaaaac	aaattacaaa	aattcaaaat	tttcgggttt	attacagggg	2580
cagcagagat	ccagtttggt	tagtaccggg	cccgtcttag	acggttaacg	cgctagccgt	2640
taattaagcc	tcgaggtcga	cggtatcgat	aagctcgctt	cacgagattc	cagcaggtcg	2700
agggacctaa	taacttcgta	tagcatacat	tatacgaagt	tatattaagg	gttccaagct	2760
taagcggccg	cgccaccatg	gtgagcaagg	gcgaggagct	gttcaccggg	gtggtgcccc	2820
tcctggtcga	gctggacggc	gacgtaaacg	gccacaagtt	cagcgtgtcc	ggcgagggcg	2880
agggcgatgc	cacctacggc	aagctgaccc	tgaagttcat	ctgcaccacc	ggcaagctgc	2940
ccgtgccttg	gcccaccctc	gtgaccaccc	tgacctacgg	cgtgcagtgc	ttcagccgct	3000
accccgacca	catgaagcag	cacgacttct	tcaagtccgc	catgcccga	ggctacgtcc	3060
aggagcgcac	catcttcttc	aaggacgacg	gcaactacaa	gacccgcgcc	gaggtgaagt	3120
tcgagggcga	caccctgggtg	aaccgcatcg	agctgaaggg	catcgacttc	aaggaggacg	3180
gcaacatcct	ggggcacaag	ctggagtaca	actacaacag	ccacaacgtc	tatatcatgg	3240
ccgacaagca	gaagaacggc	atcaaggtga	acttcaagat	ccgccacaac	atcgaggacg	3300
gcagcgtgca	gctcgccgac	cactaccagc	agaacacccc	catcggcgac	ggccccgtgc	3360
tgctgcccga	caaccactac	ctgagcaccc	agtccgccct	gagcaaagac	cccaacgaga	3420
agcgcgatca	catggtcctg	ctggagttcg	tgaccgccgc	cgggatcact	ctcggcatgg	3480
acgagctgta	caagatgcat	gccccgggat	ggcgcgccat	ggatccgcga	attcgtcgag	3540
ggacctaata	acttcgtata	gcatacatta	tacgaagtta	tacatgttta	agggttccgg	3600
ttccactagg	tacaattcga	tatcaagctt	atcgataatc	aacctctgga	ttacaaaatt	3660
tgtgaaagat	tgactggtat	tcttaactat	gttgctcctt	ttacgctatg	tggatacgct	3720

Mit-0512.ST25.txt

gctttaatgc	ctttgtatca	tgctattgct	tcccgtatgg	ctttcatttt	ctcctccttg	3780
tataaatcct	ggttgctgtc	tctttatgag	gagttgtggc	ccgttgtcag	gcaacgtggc	3840
gtggtgtgca	ctgtgtttgc	tgacgcaacc	cccactgggt	ggggcattgc	caccacctgt	3900
cagctccttt	ccgggacttt	cgctttcccc	ctccctattg	ccacggcgga	actcatcgcc	3960
gcctgccttg	cccgtgctg	gacaggggct	cggctgttgg	gactgacaa	ttccgtggtg	4020
ttgtcgggga	aatcatcgtc	ctttccttgg	ctgctcgctt	gtgttgccac	ctggattctg	4080
cgcgggacgt	ccttctgcta	cgctcccttcg	gccctcaatc	cagcggacct	tccttcccgc	4140
ggcctgctgc	cggctctgcg	gcctcttccg	cgtcttcgcc	ttcgccctca	gacgagtcgg	4200
atctcccttt	gggccgcctc	cccgcatcga	taccgtcgac	ctcgatcgag	acctagaaaa	4260
acatggagca	atcacaagta	gcaatacagc	agctaccaat	gctgattgtg	cctggctaga	4320
agcacaagag	gaggaggagg	tgggttttcc	agtcacacct	caggtagcctt	taagaccaat	4380
gacttacaag	gcagctgtag	atcttagcca	ctttttaaaa	gaaaaggggg	gactggaagg	4440
gctaattcac	tcccaacgaa	gacaagatat	ccttgatctg	tggatctacc	acacacaagg	4500
ctacttcctt	gattggcaga	actacacacc	agggccaggg	atcagatatc	actgacctt	4560
tggatggtgc	tacaagctag	taccagttga	gcaagagaag	gtagaagaag	ccaatgaagg	4620
agagaacacc	cgcttggttac	accctgtgag	cctgcatggg	atggatgacc	cggagagaga	4680
agtattagag	tggaggtttg	acagccgcct	agcatttcat	cacatggccc	gagagctgca	4740
tccggactgt	actgggtctc	tctggttaga	ccagatctga	gcctgggagc	tctctggcta	4800
actagggaac	ccactgctta	agcctcaata	aagcttgcct	tgagtgcctt	aagtagtgtg	4860
tgcccgtctg	ttgtgtgact	ctggtaacta	gagatccctc	agaccctttt	agtcagtgtg	4920
gaaaatctct	agcagcatgt	gagcaaaaagg	ccagcaaaaag	gccaggaacc	gtaaaaaggc	4980
cgcgttgctg	gcgtttttcc	ataggctccg	ccccctgac	gagcatcaca	aaaatcgacg	5040
ctcaagtcag	aggtggcgaa	acccgacagg	actataaaga	taccaggcgt	ttccccctgg	5100
aagctccctc	gtgcgctctc	ctgttccgac	cctgccgctt	accggatacc	tgtccgcctt	5160
tctcccttcg	ggaagcgtgg	cgctttctca	tagctcacgc	tgtaggtatc	tcagttcggt	5220
gtaggtcggt	cgctccaagc	tgggctgtgt	gcacgaaccc	cccgttcagc	ccgaccgctg	5280
cgccttatcc	ggtaactatc	gtcttgagtc	caaccgggta	agacacgact	tatcgccact	5340
ggcagcagcc	actggtaaca	ggattagcag	agcgagggtat	gtaggcggtg	ctacagagtt	5400
cttgaagtgg	tggcctaact	acggctacac	tagaagaaca	gtatttggtg	tctgcgctct	5460
gctgaagcca	gttaccttcg	gaaaaagagt	tggtagctct	tgatccggca	aacaaaccac	5520
cgcctggtagc	gggtggttttt	ttgtttgcaa	gcagcagatt	acgcgcagaa	aaaaaggatc	5580

Mit-0512.ST25.txt

tcaagaagat cctttgatct tttctacggg gtctgacgct cagtggaaacg aaaactcacg 5640
ttaagggatt ttggtcatga gattatcaaa aaggatcttc acctagatcc ttttaaatta 5700
aaaatgaagt tttaaatcaa tctaaagtat atatgagtaa acttgggtctg acagttacca 5760
atgcttaatc agtgaggcac ctatctcagc gatctgtcta tttcgttcat ccatagttgc 5820
ctgactcccc gtcgtgtaga taactacgat acgggagggc ttaccatctg gccccagtcg 5880
tgcaatgata ccgcgagacc cacgctcacc ggctccagat ttatcagcaa taaaccagcc 5940
agccggaagg gccgagcgca gaagtgggtcc tgcaacttta tccgcctcca tccagtctat 6000
taattgttgc cgggaagcta gagtaagtag ttcgccagtt aatagtttgc gcaacgttgt 6060
tgccattgct acaggcatcg tgggtgtcacg ctcgctgttt ggtatggctt cattcagctc 6120
cggttcccaa cgatcaaggc gagttacatg atcccccatg ttgtgcaaaa aagcggttag 6180
ctccttcggt cctccgatcg ttgtcagaag taagtgggcc gcagtgttat cactcatggt 6240
tatggcagca ctgcataatt ctcttactgt catgccatcc gtaagatgct tttctgtgac 6300
tgggtgagtac tcaaccaagt cattctgaga atagtgtatg cggcgaccga gttgctcttg 6360
cccggcgtca atacgggata ataccgcgcc acatagcaga actttaaaag tgctcatcat 6420
tgaaaaacgt tcttcggggc gaaaactctc aaggatctta ccgctgttga gatccagttc 6480
gatgtaacct actcgtgcac ccaactgac ttcagcatct tttactttca ccagcgtttc 6540
tgggtgagca aaaacaggaa ggcaaaatgc cgcaaaaaag ggaataaggg cgacacggaa 6600
atgttgaata ctcatactct tcttttttca atattattga agcatttatc agggttattg 6660
tctcatgagc ggatacatat ttgaatgtat ttagaaaaat aaacaaatag gggttccgcg 6720
cacatttccc cgaaaagtgc cacctgac 6748

<210> 4

<211> 6706

<212> DNA

<213> Artificial

<220>

<223> lentiviral vector sequence

<400> 4

gtcgacggat cgggagatct cccgatcccc tatggtgcac tctcagtaca atctgctctg 60
atgccgcata gttaagccag tatctgctcc ctgcttgtgt gttggagggtc gctgagtagt 120
gcgcgagcaa aatttaagct acaacaaggc aaggcttgac cgacaattgc atgaagaatc 180
tgcttaggggt taggcgtttt gcgctgcttc gcgatgtacg ggccagatat acgcgttgac 240
attgattatt gactagttat taatagtaat caattacggg gtcattagtt catagcccat 300
atatggagtt ccgcgttaca taacttacgg taaatggccc gcctggctga ccgccaacg 360
acccccgccc attgacgtca ataatgacgt atgttcccat agtaacgcca atagggactt 420

Mit-0512.ST25.txt

tccattgacg	tcaatgggtg	gagtattttac	ggtaaactgc	ccacttggca	gtacatcaag	480
tgtatcatat	gccaaagtacg	ccccctattg	acgtcaatga	cggtaaattgg	cccgcctggc	540
attatgccc	gtacatgacc	ttatgggact	ttcctacttg	gcagtacatc	tacgtattag	600
tcatcgctat	taccatgggtg	atgcgggtttt	ggcagtacat	caatggg	cggtagcggt	660
ttgactcacg	gggatttcca	agtctccacc	ccattgacgt	caatgggag	ttgttttggc	720
acaaaaatca	acgggacttt	ccaaaatgtc	gtaacaactc	cgccccattg	acgcaaattg	780
gcggtaggcg	tgtacgggtg	gaggtctata	taagcagcgc	gttttgcctg	tactgggtct	840
ctctgggttag	accagatctg	agcctgggag	ctctctggct	aactagggaa	cccactgctt	900
aagcctcaat	aaagcttgcc	ttgagtgtct	caagtagtgt	gtgcccgtct	gttgtgtgac	960
tctggtaact	agagatccct	cagacccttt	tagtcagtgt	ggaaaatctc	tagcagtggc	1020
gcccgaacag	ggacttgaaa	gcgaaaggga	aaccagagga	gctctctcga	cgcaggactc	1080
ggcttgctga	agcgcgcacg	gcaagaggcg	aggggcggcg	actggtgagt	acgccaaaaa	1140
ttttgactag	cggaggctag	aaggagagag	atgggtgcga	gagcgtcagt	attaagcggg	1200
ggagaattag	atcgcgatgg	gaaaaaattc	ggttaaggcc	aggggggaaag	aaaaaatata	1260
aattaaaaca	tatagtattg	gcaagcaggg	agctagaacg	attcgcagtt	aatcctggcc	1320
tgttagaaac	atcagaaggc	tgtagacaaa	tactgggaca	gctacaacca	tcccttcaga	1380
caggatcaga	agaacttaga	tcattatata	atacagtagc	aaccctctat	tgtgtgcatc	1440
aaaggataga	gataaaagac	accaaggaag	ctttagacaa	gatagaggaa	gagcaaaaaca	1500
aaagtaagac	caccgcacag	caagcggccg	gccgcgctga	tcttcagacc	tggaggagga	1560
gatatgaggg	acaattggag	aagtgaatta	tataaatata	aagtagtaaa	aattgaacca	1620
ttaggagtag	caccaccaa	ggcaaagaga	agagtgggtg	agagagaaaa	aagagcagtg	1680
ggaataggag	ctttgttcct	tgggttcttg	ggagcagcag	gaagcactat	gggcgcagcg	1740
tcaatgacgc	tgacggtaca	ggccagacaa	ttattgtctg	gtatagtgc	gcagcagaac	1800
aatttgctga	gggctattga	ggcgcaacag	catctgttgc	aactcacagt	ctggggcatc	1860
aagcagctcc	aggcaagaat	cctggctgtg	gaaagatacc	taaaggatca	acagctcctg	1920
gggatttggg	gttgctctg	aaaactcatt	tgcaccactg	ctgtgccttg	gaatgctagt	1980
tggagtaata	aatctctgga	acagatttgg	aatcacacga	cctggatgga	gtgggacaga	2040
gaaattaaca	attacacaag	cttaatacac	tccttaattg	aagaatcgca	aaaccagcaa	2100
gaaaagaatg	aacaagaatt	attggaatta	gataaatggg	caagtttgtg	gaattggttt	2160
aacataacaa	attggctgtg	gtatataaaa	ttattcataa	tgatagtagg	aggcttggtg	2220
ggtttaagaa	tagtttttgc	tgtactttct	atagtgaata	gagttaggca	gggatattca	2280

Mit-0512.ST25.txt

ccattatcgt	ttcagaccca	cctcccaacc	ccgaggggac	ccgacaggcc	cgaaggaata	2340
gaagaagaag	gtggagagag	agacagagac	agatccattc	gattagttaa	cggatcggca	2400
ctgcgtgcgc	caattctgca	gacaaatggc	agtattcatc	cacaatttta	aaagaaaagg	2460
ggggattggg	gggtacagt	caggggaaa	aatagtagac	ataatagcaa	cagacataca	2520
aactaaagaa	ttacaaaaac	aaattacaaa	aattcaaaat	tttcgggttt	attacagggg	2580
cagcagagat	ccagtttggt	tagtaccggg	cccgtcttag	acgggttaacg	cgctagccgt	2640
taattaagcc	tcgaggtcga	cggtatcgat	aagctcgctt	cacgagattc	cagcaggtcg	2700
agggacctaa	taacttcgta	tagcatacat	tatacgaagt	tatattaagg	gttccaagct	2760
taagcggccg	cgccaccatg	gcctcctccg	agaacgtcat	caccgagttc	atgcgcttca	2820
aggtgcgcac	ggagggcacc	gtgaacggcc	acgagttcga	gatcgagggc	gagggcgagg	2880
gccgccccta	cgagggccac	aacaccgtga	agctgaaggt	gaccaagggc	ggccccctgc	2940
ccttcgcctg	ggacatcctg	tccccccagt	tccagtacgg	ctccaagggtg	tacgtgaagc	3000
accccgccga	catccccgac	tacaagaagc	tgtccttccc	cgagggcttc	aagtgggagc	3060
gcgtgatgaa	cttcgaggac	ggcggcgtgg	cgaccgtgac	ccaggactcc	tccctgcagg	3120
acggctgctt	catctacaag	gtgaagttca	tcggcgtgaa	cttccccctcc	gacggccccg	3180
tgatgcagaa	gaagaccatg	ggctgggagg	cctccaccga	gcgcctgtac	ccccgcgacg	3240
gcgtgctgaa	gggcgagacc	cacaaggccc	tgaagctgaa	ggacggcggc	cactacctgg	3300
tggagttcaa	gtccatctac	atggccaaga	agcccgtgca	gctgcccggc	tactactacg	3360
tggacgccaa	gctggacatc	acctcccaca	acgaggacta	caccatcggtg	gagcagtagc	3420
agcgcaccga	gggccgccac	cacctgttcc	tgatgcatgc	cccgggatgg	cgcgccatgg	3480
atccgcgaat	tcgtcgaggg	acctaataac	ttcgtatagc	atacattata	cgaagttata	3540
catgtttaag	ggttccgggt	ccactaggta	caattcgata	tcaagcttat	cgataatcaa	3600
cctctggatt	acaaaatttg	tgaaagattg	actggtattc	ttaactatgt	tgctcctttt	3660
acgctatgtg	gatacgtgac	tttaatgcct	ttgtatcatg	ctattgcttc	ccgtatggct	3720
ttcattttct	cctccttgta	taaatcctgg	ttgctgtctc	tttatgagga	gttgtggccc	3780
gttgtcaggc	aacgtggcgt	ggtgtgcact	gtgtttgctg	acgcaacccc	cactggttgg	3840
ggcattgcca	ccacctgtca	gctcctttcc	gggactttcg	ctttccccct	ccctattgcc	3900
acggcggaac	tcacgcgcgc	ctgccttgcc	cgctgctgga	caggggctcg	gctgttgggc	3960
actgacaatt	ccgtgggtgt	gtcggggaaa	tcacgtgcct	ttccttggct	gctcgccgtg	4020
gttgccacct	ggattctgcg	cgggacgtcc	ttctgctacg	tcccttcggc	cctcaatcca	4080
gcggaccttc	cttcccgcgg	cctgctgccg	gctctgcggc	ctcttccgcg	tcttcgcctt	4140
cgccctcaga	cgagtcggat	ctccctttgg	gccgcctccc	cgcatcgata	ccgtcgacct	4200

Mit-0512.ST25.txt

cgatcgagac	ctagaaaaac	atggagcaat	cacaagtagc	aatacagcag	ctaccaatgc	4260
tgattgtgcc	tggctagaag	cacaagagga	ggaggagggtg	ggttttccag	tcacacctca	4320
ggtaccttta	agaccaatga	cttacaaggc	agctgtagat	cttagccact	ttttaaaaga	4380
aaagggggga	ctggaagggc	taattcactc	ccaacgaaga	caagatatcc	ttgatctgtg	4440
gatctaccac	acacaaggct	acttccctga	ttggcagaac	tacacaccag	ggccagggat	4500
cagatatcca	ctgacctttg	gatgggtgcta	caagctagta	ccagttgagc	aagagaagggt	4560
agaagaagcc	aatgaaggag	agaacacccg	cttgttacac	cctgtgagcc	tgcattgggat	4620
ggatgacccg	gagagagaag	tattagagtg	gaggtttgac	agccgcctag	catttcatca	4680
catggcccga	gagctgcatc	cggactgtac	tgggtctctc	tggttagacc	agatctgagc	4740
ctgggagctc	tctggctaac	tagggaaccc	actgcttaag	cctcaataaa	gcttgccctg	4800
agtgcctcaa	gtagtgtgtg	cccgtctgtt	gtgtgactct	ggtaactaga	gatccctcag	4860
acccttttag	tcagtgtgga	aaatctctag	cagcatgtga	gcaaaaggcc	agcaaaaggc	4920
caggaaccgt	aaaaaggccg	cgttgctggc	gtttttccat	aggctccgcc	cccctgacga	4980
gcatcacaaa	aatcgacgct	caagtcagag	gtggcgaaac	ccgacaggac	tataaagata	5040
ccaggcgttt	ccccctggaa	gctccctcgt	gcgctctcct	gttccgaccc	tgccgcttac	5100
cggatacctg	tccgcctttc	tcccttcggg	aagcgtggcg	ctttctcata	gctcacgctg	5160
taggtatctc	agttcgggtg	aggtcgttcg	ctccaagctg	ggctgtgtgc	acgaaccccc	5220
cgttcagccc	gaccgctgcg	ccttatccgg	taactatcgt	cttgagtcca	acccggtaag	5280
acacgactta	tcgccactgg	cagcagccac	tggtaacagg	attagcagag	cgaggatatgt	5340
aggcgggtgct	acagagttct	tgaagtgggtg	gcctaactac	ggctacacta	gaagaacagt	5400
atttggtatc	tgcgctctgc	tgaagccagt	taccttcgga	aaaagagttg	gtagctcttg	5460
atccggcaaa	caaaccaccg	ctggtagcgg	tggttttttt	gtttgcaagc	agcagattac	5520
gcgcagaaaa	aaaggatctc	aagaagatcc	tttgatcttt	tctacgggggt	ctgacgctca	5580
gtggaacgaa	aactcacggt	aagggatttt	ggcatgaga	ttatcaaaaa	ggatcttcac	5640
ctagatcctt	ttaaattaaa	aatgaagttt	taaatcaatc	taaagtatat	atgagtaaac	5700
ttggtctgac	agttaccaat	gcttaatcag	tgaggcacct	atctcagcga	tctgtctatt	5760
tcgttcatcc	atagttgcct	gactccccgt	cgtgtagata	actacgatac	gggagggctt	5820
accatctggc	cccagtgctg	caatgatacc	gcgagaccca	cgctcaccgg	ctccagattt	5880
atcagcaata	aaccagccag	ccggaagggc	cgagcgcaga	agtggctctg	caactttatc	5940
cgcctccatc	cagtctatta	attggtgccg	ggaagctaga	gtaagtagtt	cgccagttaa	6000
tagtttgccg	aacgttggtg	ccattgctac	aggcatcgtg	gtgtcacgct	cgctcgtttg	6060

Mit-0512.ST25.txt

tatggcttca ttcagctccg gttcccaacg atcaaggcga gttacatgat ccccatgtt	6120
gtgcaaaaaa gcggttagct ctttcggtcc tccgatcgtt gtcagaagta agttggccgc	6180
agtgttatca ctcatgggta tggcagcact gcataattct cttactgtca tgccatccgt	6240
aagatgcttt tctgtgactg gtgagtactc aaccaagtca ttctgagaat agtgtatgcg	6300
gcgaccgagt tgctcttgcc cggcgtcaat acgggataat accgcgccac atagcagaac	6360
tttaaaagtg ctcatcattg gaaaacgttc ttcggggcga aaactctcaa ggatcttacc	6420
gctgttgaga tccagttcga tgtaaccac tcgtgcaccc aactgatctt cagcatcttt	6480
tactttcacc agcgtttctg ggtgagcaaa aacaggaagg caaaatgccg caaaaaaggg	6540
aataagggcg acacggaaat gttgaatact catactcttc ctttttcaat attattgaag	6600
catttatcag ggttattgtc tcatgagcgg atacatattt gaatgtattt agaaaaataa	6660
acaaataggg gttccgcgca ctttccccg aaaagtgcc cctgac	6706

<210> 5
 <211> 7248
 <212> DNA
 <213> Artificial

<220>
 <223> lentiviral vector sequence

<400> 5	
gtcgacggat cgggagatct cccgatcccc tatggtgcac tctcagtaca atctgctctg	60
atgccgcata gttaagccag tatctgctcc ctgcttggtg gttggagggtc gctgagtagt	120
gcgcgagcaa aatttaagct acaacaaggc aaggcttgac cgacaattgc atgaagaatc	180
tgcttagggg taggcgtttt gcgctgcttc gcgatgtacg ggccagatat acgcgttgac	240
attgattatt gactagttat taatagtaat caattacggg gtcattagtt catagcccat	300
atatggagtt ccgcgttaca taacttacgg taaatggccc gcctggctga ccgccaacg	360
acccccgcc attgacgtca ataatgacgt atgttcccat agtaacgcca atagggactt	420
tccattgacg tcaatgggtg gagtatttac ggtaaactgc ccacttgga gtacatcaag	480
tgtatcatat gccaaagtacg cccctattg acgtcaatga cggtaaattg cccgcctggc	540
attatgccca gtacatgacc ttatgggact ttcctacttg gcagtacatc tacgtattag	600
tcatcgctat taccatgggt atgcgggtttt ggcagtacat caatgggcgt ggatagcgg	660
ttgactcacg gggatttcca agtctccacc ccattgacgt caatgggagt ttgttttggc	720
acaaaaatca acgggacttt ccaaaatgtc gtaacaactc cgccccattg acgcaaatgg	780
gcggtaggcg tgtacgggtg gaggtctata taagcagcgc gttttgcctg tactgggtct	840
ctctgggttag accagatctg agcctgggag ctctctggct aactagggaa cccactgctt	900
aagcctcaat aaagcttgcc ttgagtgtt caagtagtgt gtgcccgtct gttgtgtgac	960

Mit-0512.ST25.txt

tctggttaact	agagatccct	cagacccttt	tagtcagtgt	ggaaaatctc	tagcagtggc	1020
gcccgaacag	ggacttgaaa	gcgaaaggga	aaccagagga	gctctctcga	cgcaggactc	1080
ggcttgctga	agcgcgcacg	gcaagaggcg	aggggcggcg	actggtgagt	acgccaaaaa	1140
ttttgactag	cggaggctag	aaggagagag	atgggtgcga	gagcgtcagt	attaagcggg	1200
ggagaattag	atcgcgatgg	gaaaaaattc	ggttaaggcc	agggggaaaag	aaaaaatata	1260
aattaaaaca	tatagtatgg	gcaagcaggg	agctagaacg	attcgcagtt	aatcctggcc	1320
tgttagaaac	atcagaaggc	tgtagacaaa	tactgggaca	gctacaacca	tcccttcaga	1380
caggatcaga	agaacttaga	tcattatata	atacagtagc	aaccctctat	tgtgtgcatc	1440
aaaggataga	gataaaagac	accaaggaag	ctttagacaa	gatagaggaa	gagcaaaaaca	1500
aaagtaagac	caccgcacag	caagcggccg	gccgcgctga	tcttcagacc	tggaggagga	1560
gatatgaggg	acaattggag	aagtgaatta	tataaatata	aagtagtaaa	aattgaacca	1620
ttaggagtag	caccaccaa	ggcaaagaga	agagtgggtg	agagagaaaa	aagagcagtg	1680
ggaataggag	ctttgttcct	tgggttcttg	ggagcagcag	gaagcactat	gggcgcagcg	1740
tcaatgacgc	tgacggtaca	ggccagacaa	ttattgtctg	gtatagtgca	gcagcagaac	1800
aatttgctga	gggctattga	ggcgcaacag	catctgttgc	aactcacagt	ctggggcatc	1860
aagcagctcc	aggcaagaat	cctggctgtg	gaaagatacc	taaaggatca	acagctcctg	1920
gggatttggg	gttgctctgg	aaaactcatt	tgcaccactg	ctgtgccttg	gaatgctagt	1980
tggagtaata	aatctctgga	acagatttgg	aatcacacga	cctggatgga	gtgggacaga	2040
gaaattaaca	attacacaag	cttaatacac	tccttaattg	aagaatcgca	aaaccagcaa	2100
gaaaagaatg	aacaagaatt	attggaatta	gataaatggg	caagtttgtg	gaattggttt	2160
aacataacaa	attggctgtg	gtatataaaa	ttattcataa	tgatagtagg	aggcttggtg	2220
ggtttaagaa	tagtttttgc	tgtactttct	atagtgaata	gagttaggca	gggatattca	2280
ccattatcgt	ttcagaccca	cctcccaacc	ccgaggggac	ccgacaggcc	cgaaggaata	2340
gaagaagaag	gtggagagag	agacagagac	agatccattc	gattagtgaa	cggatcggca	2400
ctgcgtgcgc	caattctgca	gacaaatggc	agtattcatc	cacaatttta	aaagaaaagg	2460
ggggattggg	gggtacagtg	caggggaaaag	aatagtagac	ataatagcaa	cagacataca	2520
aactaaagaa	ttacaaaaac	aaattacaaa	aattcaaaat	tttcgggttt	attacagggg	2580
cagcagagat	ccagtttggg	tagtaccggg	cccgtcttag	acggttgatc	tggcctccgc	2640
gccgggtttt	ggcgctctcc	gcgggcggcc	ccctcctcac	ggcgagcgct	gccacgtcag	2700
acgaagggcg	caggagcgct	ctgatccttc	cgcccggacg	ctcaggacag	cggcccgcgt	2760
ctcataagac	tcggccttag	aaccccagta	tcagcagaag	gacatttttag	gacgggactt	2820

Mit-0512.ST25.txt

gggtgactct	agggcactgg	ttttctttcc	agagagcgga	acaggcgagg	aaaagtagtc	2880
ccttctcggc	gattctgcgg	agggatctcc	gtggggcggt	gaacgccgat	gattatataa	2940
ggacgcgccg	ggtgtggcac	agctagttcc	gtcgcagccg	ggatttgggg	cgcggttctt	3000
gtttgtggat	cgctgtgatc	gtcacttggt	gagtagcggg	ctgctgggct	ggccggggct	3060
ttcgtggccg	ccggggccgt	cggtgggacg	gaagcgtgtg	gagagaccgc	caagggctgt	3120
agtctgggtc	cgcgagcaag	gttgcctga	actggggggt	ggggggagcg	cagcaaaatg	3180
gcggctgttc	ccgagtcttg	aatggaagac	gcttgtgagg	cgggctgtga	ggtcgttgaa	3240
acaagggtgg	gggcatgggt	ggcggcaaga	acccaagggt	ttgaggcctt	cgctaatacg	3300
ggaaagctct	tattcggggt	agatgggctg	gggcaccatc	tggggaccct	gacgtgaagt	3360
ttgtcactga	ctggagaact	cggtttgtcg	tctgttgcg	gggcggcagt	tatgcgggtg	3420
cgttgggcag	tgcacccgta	cctttgggag	cgcgcgccct	cgtcgtgtcg	tgacgtcacc	3480
cgttctgttg	gcttataatg	cagggtgggg	ccacctgccg	gtagggtgtg	ggtaggcttt	3540
tctccgtcgc	aggacgcagg	gttcgggcct	agggtaggct	ctcctgaatc	gacaggcgcc	3600
ggacctctgg	tgaggggagg	gataagttag	gcgtcagttt	ctttggtcgg	ttttatgtac	3660
ctatcttctt	aagtagctga	agctccgggt	ttgaactatg	cgctcggggg	tggcgagtgt	3720
gttttgtgaa	gttttttagg	caccttttga	aatgtaatca	tttgggtcaa	tatgtaattt	3780
tcagtgttag	actagtaaat	tgtccgctaa	attctggccg	tttttggtct	ttttgttaga	3840
cgaagctaac	gcgctagccg	ttaattaagc	ctcgagggtc	acggtatcga	taagctcgct	3900
tcacgagatt	ccagcagggt	gagggaccta	ataacttcgt	atagcataca	ttatacgaag	3960
ttatattaag	ggttccaagc	ttaagcggcc	gccgatgcat	gccccgggat	ggcgcgccat	4020
ggatccgcga	attcgtcgag	ggacctataa	acttcgtata	gcatacatta	tacgaagtta	4080
tacatgttta	agggttccgg	ttccactagg	tacaattcga	tatcaagctt	atcgataatc	4140
aacctctgga	ttacaaaatt	tgtgaaagat	tgactgggat	tcttaactat	gttgctcctt	4200
ttacgctatg	tggatacgct	gctttaatgc	ctttgtatca	tgctattgct	tcccgtatgg	4260
ctttcatttt	ctcctccttg	tataaatcct	ggttgctgtc	tctttatgag	gagttgtggc	4320
ccgttgtcag	gcaacgtggc	gtggtgtgca	ctgtgtttgc	tgacgcaacc	cccactgggt	4380
ggggcattgc	caccacctgt	cagctccttt	ccgggacttt	cgctttcccc	ctccctattg	4440
ccacggcgga	actcatcgcc	gcctgccttg	cccgtgctg	gacaggggct	cggctgttgg	4500
gcactgacaa	ttccgtgggt	ttgtcgggga	aatcatcgct	ctttccttgg	ctgctcgcct	4560
gtgttgccac	ctggattctg	cgcgggacgt	ccttctgcta	cgccccctcg	gccctcaatc	4620
cagcggacct	tccttcccgc	ggcctgctgc	cggctctgcg	gcctcttccg	cgtcttcgcc	4680
ttcgccctca	gacgagtcgg	atctcccttt	gggccgcctc	cccgcatacga	taccgtcgac	4740

Mit-0512.ST25.txt

ctcgatcgag	acctagaaaa	acatggagca	atcacaagta	gcaatacagc	agctaccaat	4800
gctgattgtg	cctggctaga	agcacaagag	gaggaggagg	tgggttttcc	agtcacacct	4860
caggtacctt	taagaccaat	gacttacaag	gcagctgtag	atcttagcca	ctttttaaaa	4920
gaaaaggggg	gactggaagg	gctaattcac	tcccaacgaa	gacaagatat	ccttgatctg	4980
tggatctacc	acacacaagg	ctacttcctt	gattggcaga	actacacacc	agggccaggg	5040
atcagatatc	cactgacctt	tggatggtgc	tacaagctag	taccagttga	gcaagagaag	5100
gtagaagaag	ccaatgaagg	agagaacacc	cgcttggttac	accctgtgag	cctgcatggg	5160
atggatgacc	cggagagaga	agtattagag	tggaggtttg	acagccgcct	agcatttcat	5220
cacatggccc	gagagctgca	tccggactgt	actgggtctc	tctggttaga	ccagatctga	5280
gcctgggagc	tctctggcta	actagggaac	ccactgctta	agcctcaata	aagcttgcct	5340
tgagtgcctc	aagtagtggt	tgcccgctct	ttgtgtgact	ctggtaacta	gagatccctc	5400
agaccctttt	agtcagtgtg	gaaaatctct	agcagcatgt	gagcaaaaagg	ccagcaaaaag	5460
gccaggaacc	gtaaaaaggc	cgcgttgctg	gcgtttttcc	ataggctccg	ccccctgac	5520
gagcatcaca	aaaatcgacg	ctcaagtcag	agggtggcga	acccgacagg	actataaaga	5580
taccaggcgt	ttccccctgg	aagctccctc	gtgcgctctc	ctgttccgac	cctgccgctt	5640
accggatacc	tgtccgcctt	tctcccttcg	ggaagcgtgg	cgctttctca	tagctcacgc	5700
tgtaggatc	tcagttcggt	gtaggtcggt	cgctccaagc	tgggctgtgt	gcacgaaccc	5760
cccgttcagc	ccgaccgctg	cgcttatatc	ggtaactatc	gtcttgagtc	caacccggta	5820
agacacgact	tatcgccact	ggcagcagcc	actggtaaca	ggattagcag	agcgagggtat	5880
gtaggcggtg	ctacagagtt	cttgaagtgg	tggcctaact	acggctacac	tagaagaaca	5940
gtatttggtg	tctgcgctct	gctgaagcca	gttaccttcg	gaaaaagagt	tggtagctct	6000
tgatccggca	aacaaaccac	cgctggtagc	ggtggttttt	ttgtttgcaa	gcagcagatt	6060
acgcgcagaa	aaaaaggatc	tcaagaagat	cctttgatct	tttctacggg	gtctgacgct	6120
cagtggaacg	aaaactcacg	ttaagggatt	ttgggtcatga	gattatcaaa	aaggatcttc	6180
acctagatcc	ttttaaatga	aaaatgaagt	tttaaatcaa	tctaaagtat	atatgagtaa	6240
acttggtctg	acagttacca	atgcttaatc	agtgaggcac	ctatctcagc	gatctgtcta	6300
tttcggtcat	ccatagttgc	ctgactcccc	gtcgtgtaga	taactacgat	acgggagggc	6360
ttaccatctg	gccccagtg	tgcaatgata	ccgcgagacc	cacgctcacc	ggctccagat	6420
ttatcagcaa	taaaccagcc	agccggaagg	gccgagcgca	gaagtgggtcc	tgcaacttta	6480
tccgcctcca	tccagtctat	taattggtgc	cgggaaagcta	gagtaagtag	ttcgccagtt	6540
aatagtttgc	gcaacgttgt	tgccattgct	acaggcatcg	tgggtgtcacg	ctcgtcgttt	6600

Mit-0512.ST25.txt

```

ggtatggctt cattcagctc cggttcccaa cgatcaaggc gagttacatg atcccccatg 6660
ttgtgcaaaa aagcggtttag ctccttcggt cctccgatcg ttgtcagaag taagttggcc 6720
gcagtgttat cactcatggt tatggcagca ctgcataatt ctcttactgt catgccatcc 6780
gtaagatgct tttctgtgac tgggtgagta tcaaccaagt cattctgaga atagtgtatg 6840
cggcgaccga gttgctcttg cccggcggtca atacgggata ataccgcgcc acatagcaga 6900
actttaaaag tgctcatcat tggaaaacgt tcttcggggc gaaaactctc aaggatctta 6960
ccgctgttga gatccagttc gatgtaacct actcgtgcac ccaactgatc ttcagcatct 7020
tttactttca ccagcgtttc tgggtgagca aaaacaggaa ggcaaaatgc cgcaaaaaag 7080
ggaataaggg cgacacggaa atgttgaaata ctcatactct tcctttttca atattattga 7140
agcatttatc agggttattg tctcatgagc ggatacatat ttgaatgtat ttagaaaaat 7200
aaacaaatag gggttccgcg cacatttccc cgaaaagtgc cacctgac 7248

```

```

<210> 6
<211> 7969
<212> DNA
<213> Artificial

```

```

<220>
<223> lentiviral vector sequence

```

```

<400> 6
gtcgacggat cgggagatct cccgatcccc tatggtgcac tctcagtaca atctgctctg 60
atgccgcata gttaagccag tatctgctcc ctgcttgtgt gttggagggtc gctgagtagt 120
gcgcgagcaa aatttaagct acaacaaggc aaggcttgac cgacaattgc atgaagaatc 180
tgcttagggg taggcgtttt gcgctgcttc gcgatgtacg ggccagatat acgcgttgac 240
attgattatt gactagttat taatagtaat caattacggg gtcattagtt catagcccat 300
atatggagtt ccgcgttaca taacttacgg taaatggccc gcctggctga ccgccaacg 360
acccccgcc attgacgtca ataatgacgt atgttcccat agtaacgcca atagggactt 420
tccattgacg tcaatgggtg gagtatttac ggtaaactgc ccacttggca gtacatcaag 480
tgtatcatat gccaagtacg cccctattg acgtcaatga cggtaaattg cccgcctggc 540
attatgccca gtacatgacc ttatgggact ttcctacttg gcagtacatc tacgtattag 600
tcatcgctat taccatgggt atgcgggtttt ggcagtacat caatgggcgt ggatagcggg 660
ttgactcacg gggatttcca agtctccacc ccattgacgt caatgggagt ttgttttggc 720
acaaaaatca acgggacttt ccaaaatgtc gtaacaactc cgccccattg acgcaaatgg 780
gcggtagggc tgtacgggtg gaggtctata taagcagcgc gttttgcctg tactgggtct 840
ctctggttag accagatctg agcctgggag ctctctggct aactagggaa cccactgctt 900
aagcctcaat aaagcttgcc ttgagtgtt caagtagtgt gtgcccgtct gttgtgtgac 960

```

Mit-0512.ST25.txt

tctggttaact	agagatccct	cagacccttt	tagtcagtgt	ggaaaatctc	tagcagtggc	1020
gcccgaacag	ggacttgaaa	gcgaaagggg	aaccagagga	gctctctcga	cgcaggactc	1080
ggcttgctga	agcgcgcacg	gcaagaggcg	aggggcggcg	actggtgagt	acgccaaaaa	1140
ttttgactag	cggaggctag	aaggagagag	atgggtgcga	gagcgtcagt	attaagcggg	1200
ggagaattag	atcgcgatgg	gaaaaaattc	ggttaaggcc	agggggaaaag	aaaaaatata	1260
aattaaaaca	tatagtatgg	gcaagcaggg	agctagaacg	attcgcagtt	aatcctggcc	1320
tgttagaaac	atcagaaggc	tgtagacaaa	tactgggaca	gctacaacca	tcccttcaga	1380
caggatcaga	agaacttaga	tcattatata	atacagtagc	aaccctctat	tgtgtgcatc	1440
aaaggataga	gataaaagac	accaaggaag	ctttagacaa	gatagaggaa	gagcaaaaaca	1500
aaagtaagac	caccgcacag	caagcggccg	gccgcgctga	tcttcagacc	tggaggagga	1560
gatatgaggg	acaattggag	aagtgaatta	tataaatata	aagtagtaaa	aattgaacca	1620
ttaggagtag	caccaccaa	ggcaaagaga	agagtgggtg	agagagaaaa	aagagcagtg	1680
ggaataggag	ctttgttcct	tgggttcctg	ggagcagcag	gaagcactat	gggcgcagcg	1740
tcaatgacgc	tgacggtaca	ggccagacaa	ttattgtctg	gtatagtgca	gcagcagaac	1800
aatttgctga	gggctattga	ggcgcaacag	catctgttgc	aactcacagt	ctggggcatc	1860
aagcagctcc	aggcaagaat	cctggctgtg	gaaagatacc	taaaggatca	acagctcctg	1920
gggatttggg	gttgctctgg	aaaactcatt	tgcaccactg	ctgtgccttg	gaatgctagt	1980
tggagtaata	aatctctgga	acagatttgg	aatcacacga	cctggatgga	gtgggacaga	2040
gaaattaaca	attacacaag	cttaatacac	tccttaattg	aagaatcgca	aaaccagcaa	2100
gaaaagaatg	aacaagaatt	attggaatta	gataaatggg	caagtttgtg	gaattggttt	2160
aacataacaa	attggctgtg	gtatataaaa	ttattcataa	tgatagtagg	aggcttggtg	2220
ggtttaagaa	tagtttttgc	tgtactttct	atagtgaata	gagttaggca	gggatattca	2280
ccattatcgt	ttcagaccca	cctcccaacc	ccgaggggac	ccgacaggcc	cgaaggaata	2340
gaagaagaag	gtggagagag	agacagagac	agatccattc	gattagtga	cggatcggca	2400
ctgcgtgcgc	caattctgca	gacaaatggc	agtattcatc	cacaatttta	aaagaaaagg	2460
ggggattggg	gggtacagtg	caggggaaaag	aatagtagac	ataatagcaa	cagacataca	2520
aactaaagaa	ttacaaaaac	aaattacaaa	aattcaaaat	tttcgggttt	attacagggg	2580
cagcagagat	ccagtttggg	tagtaccggg	cccgtcttag	acggttgatc	tggcctccgc	2640
gccgggtttt	ggcgctccc	gcgggcggcc	ccctcctcac	ggcgagcgct	gccacgtcag	2700
acgaagggcg	caggagcgtc	ctgatccttc	cgccccggacg	ctcaggacag	cggcccgcgtg	2760
ctcataagac	tcggccttag	aaccccagta	tcagcagaag	gacatttttag	gacgggactt	2820

Mit-0512.ST25.txt

gggtgactct	agggcactgg	ttttctttcc	agagagcgga	acaggcgagg	aaaagtagtc	2880
ccttctcggc	gattctgcgg	agggatctcc	gtggggcggt	gaacgccgat	gattatataa	2940
ggacgcgccg	ggtgtggcac	agctagttcc	gtcgcagccg	ggatttgggg	cgcggttctt	3000
gtttgtggat	cgctgtgatc	gtcacttggt	gagtagcggg	ctgctgggct	ggccggggct	3060
ttcgtggccg	ccggggccgt	cggtgggacg	gaagcgtgtg	gagagaccgc	caagggctgt	3120
agtctgggtc	cgcgagcaag	gttgccctga	actggggggt	ggggggagcg	cagcaaaatg	3180
gcggctgttc	ccgagtcttg	aatggaagac	gcttgtgagg	cgggctgtga	ggtcgttgaa	3240
acaaggtggg	gggcatgggt	ggcggcaaga	acccaagggt	ttgaggcctt	cgctaatacg	3300
ggaaagctct	tattcggggt	agatgggctg	gggcaccatc	tggggaccct	gacgtgaagt	3360
ttgtcactga	ctggagaact	cggtttgtcg	tctgttgcg	gggcggcagt	tatgcgggtc	3420
cgttgggcag	tgcacccgta	cctttgggag	cgcgcgccct	cgtcgtgtcg	tgacgtcacc	3480
cgttctgttg	gcttataatg	caggggtggg	ccacctgccg	gtagggtgtg	ggtaggcttt	3540
tctccgtcgc	aggacgcagg	gttcgggcct	agggtaggct	ctcctgaatc	gacaggcgcc	3600
ggacctctgg	tgaggggagg	gataagttag	gcgtcagttt	ctttggtcgg	ttttatgtac	3660
ctatcttctt	aagtagctga	agctccgggt	ttgaactatg	cgctcggggg	tggcgagtgt	3720
gttttgtgaa	gttttttagg	caccttttga	aatgtaatca	tttgggtcaa	tatgtaattt	3780
tcagtgttag	actagtaaat	tgtccgctaa	attctggccg	tttttggtct	ttttgttaga	3840
cgaagctaac	gcgctagccg	ttaattaagc	ctcgagggtc	acggtatcga	taagctcgct	3900
tcacgagatt	ccagcagggt	gagggaccta	ataacttcgt	atagcataca	ttatacgaag	3960
ttatatatta	ggttccaagc	ttaagcggcc	gcgccaccat	ggtgagcaag	ggcgaggagc	4020
tgttcaccgg	ggtggtgccc	atcctgggtc	agctggacgg	cgacgtaaac	ggccacaagt	4080
tcagcgtgtc	cggcgagggc	gagggcgatg	ccacctacgg	caagctgacc	ctgaagttca	4140
tctgcaccac	cggcaagctg	cccgtgccct	ggcccaccct	cgtagaccacc	ctgacctacg	4200
gcgtgcagtg	cttcagccgc	tacccccgac	acatgaagca	gcacgacttc	ttcaagtccg	4260
ccatgcccga	aggctacgtc	caggagcgca	ccatcttctt	caaggacgac	ggcaactaca	4320
agaccgcgcg	cgagggtgaag	ttcgagggcg	acaccctggg	gaaccgcatc	gagctgaagg	4380
gcatcgactt	caaggaggac	ggcaacatcc	tggggcacia	gctggagtac	aactacaaca	4440
gccacaacgt	ctatatcatg	gccgacaagc	agaagaacgg	catcaagggt	aacttcaaga	4500
tccgccacaa	catcgaggac	ggcagcgtgc	agctcgccga	ccactaccag	cagaacaccc	4560
ccatcggcga	cggccccgtg	ctgctgcccc	acaaccacta	cctgagcacc	cagtccgccc	4620
tgagcaaaga	ccccaacgag	aagcgcgatc	acatgggtcct	gctggagtgc	gtgaccgccg	4680
ccgggatcac	tctcggcatg	gacgagctgt	acaagatgca	tgccccggga	tggcgcgccca	4740

Mit-0512.ST25.txt

tg gatccgcg aattcgtcga gggaccta at aacttcgtat agcatacatt atacgaagtt	4800
atacatgttt aagggttccg gttccactag gtacaattcg atatcaagct tatcgataat	4860
caacctctgg attacaaaat ttgtgaaaga ttgactggta ttcttaacta tgttgctcct	4920
tttacgctat gtggatacgc tgctttaatg cctttgtatc atgctattgc ttcccgtatg	4980
gctttcattt tctcctcctt gtataaatcc tgggttgctgt ctctttatga ggagttgtgg	5040
cccgttgctca ggcaacgtgg cgtgggtgtgc actgtgtttg ctgacgcaac cccactggt	5100
tggggcattg ccaccacctg tcagctcctt tccgggactt tcgctttccc cctccctatt	5160
gccacggcgg aactcatcgc cgcctgcctt gcccgctgct ggacaggggc tcggctgttg	5220
ggcactgaca attccgtggg gttgtcgggg aaatcatcgt cctttccttg gctgctcgcc	5280
tgtgttgcca cctggattct gcgcgggacg tccttctgct acgtcccttc ggccctcaat	5340
ccagcggacc ttctttccc cggcctgctg ccggctctgc ggctcttcc gcgtcttcgc	5400
cttcgccctc agacgagtcg gatctccctt tgggccgcct ccccgcatcg ataccgtcga	5460
cctcgatcga gacctagaaa aacatggagc aatcacaagt agcaatacag cagctaccaa	5520
tgctgattgt gcctggctag aagcacaaga ggaggaggag gtgggttttc cagtcacacc	5580
tcaggtaact ttaagaccaa tgacttaca ggcagctgta gatcttagcc actttttaa	5640
agaaaagggg ggactggaag ggctaattca ctcccaacga agacaagata tccttgatct	5700
gtggatctac cacacacaag gctacttccc tgattggcag aactacacac cagggccagg	5760
gatcagatat cactgacct ttggatggg ctacaagcta gtaccagttg agcaagagaa	5820
ggtagaagaa gccaatgaag gagagaacac ccgcttgta caccctgtga gcctgcatgg	5880
gatggatgac ccggagagag aagtattaga gtggagggtt gacagccgcc tagcatttca	5940
tcacatggcc cgagagctgc atccggactg tactgggtct ctctgggttag accagatctg	6000
agcctgggag ctctctggct aactagggaa cccactgctt aagcctcaat aaagcttgcc	6060
ttgagtgtt caagtagtgt gtgcccgtct gttgtgtgac tctggtaact agagatccct	6120
cagacccttt tagtcagtgt ggaaaatctc tagcagcatg tgagcaaaaag gccagcaaaa	6180
ggccaggaac cgtaaaaagg ccgcgttgct ggcgtttttc cataggctcc gccccctga	6240
cgagcatcac aaaaatcgac gctcaagtca gaggtggcga aaccgacag gactataaag	6300
ataccaggcg tttccccctg gaagctccct cgtgcgctct cctgttccga ccctgccgct	6360
taccggatac ctgtccgcct ttctcccttc gggaaagcgtg gcgctttctc atagctcacg	6420
ctgtaggtat ctgagttcgg ttaggtcgt tcgctccaag ctgggctgtg tgcacgaacc	6480
ccccgttcag cccgaccgct gcgccttatc cggttaactat cgtcttgagt ccaaccgggt	6540
aagacacgac ttatcgccac tggcagcagc cactggtaac aggattagca gagcgaggta	6600

Mit-0512.ST25.txt

tgtaggcggg	gctacagagt	tcttgaagtg	gtggcctaac	tacggctaca	ctagaagaac	6660
agtatttggg	atctgcgctc	tgctgaagcc	agttaccttc	ggaaaaagag	ttggtagctc	6720
ttgatccggc	aaacaaacca	ccgctggtag	cggtggtttt	tttgtttgca	agcagcagat	6780
tacgcgcaga	aaaaaaggat	ctcaagaaga	tcctttgatc	ttttctacgg	ggctctgacgc	6840
tcagtggaaac	gaaaactcac	gttaagggat	tttggtcatg	agattatcaa	aaaggatctt	6900
cacctagatc	cttttaaatt	aaaaatgaag	ttttaaatca	atctaaagta	tatatgagta	6960
aacttgggtc	gacagttacc	aatgcttaat	cagtgaggca	cctatctcag	cgatctgtct	7020
atttcgttca	tccatagttg	cctgactccc	cgctggtgag	ataactacga	tacgggaggg	7080
cttaccatct	ggccccagtg	ctgcaatgat	accgcgagac	ccacgctcac	cggtctccaga	7140
tttatcagca	ataaaccagc	cagccggaag	ggccgagcgc	agaagtggtc	ctgcaacttt	7200
atccgcctcc	atccagtcta	ttaattgttg	ccgggaagct	agagtaagta	gttcgccagt	7260
taatagtttg	cgcaacgttg	ttgccattgc	tacaggcatc	gtggtgtcac	gctcgtcgtt	7320
tggtatggct	tcattcagct	ccggttccca	acgatcaagg	cgagttacat	gatcccccat	7380
gttgtgcaaa	aaagcggtta	gctccttcgg	tcctccgatc	gttgtcagaa	gtaagttggc	7440
cgcagtgtta	tcactcatgg	ttatggcagc	actgcataat	tctcttactg	tcatgccatc	7500
cgtaagatgc	ttttctgtga	ctggtgagta	ctcaaccaag	tcattctgag	aatagtgtat	7560
gcggcgaccg	agttgctctt	gcccggcgtc	aatacgggat	aataccgcgc	cacatagcag	7620
aactttaaaa	gtgctcatca	ttggaaaacg	ttcttcgggg	cgaaaactct	caaggatctt	7680
accgctgttg	agatccagtt	cgatgtaacc	cactcgtgca	cccaactgat	cttcagcatc	7740
ttttactttc	accagcgttt	ctgggtgagc	aaaaacagga	aggcaaaatg	ccgcaaaaaa	7800
gggaataagg	gcgacacgga	aatgttgaat	actcatactc	ttcctttttc	aatattattg	7860
aagcatttat	cagggttatt	gtctcatgag	cggatacata	tttgaatgta	tttagaaaaa	7920
taaacaaata	ggggttccgc	gcacatttcc	ccgaaaagtg	ccacctgac		7969

<210> 7

<211> 7927

<212> DNA

<213> Artificial

<220>

<223> lentiviral vector sequence

<400> 7

gtcgacggat	cgggagatct	cccgatcccc	tatggtgcac	tctcagtaca	atctgctctg	60
atgccgcata	gttaagccag	tatctgctcc	ctgcttggtg	gttggagggtc	gctgagtagt	120
gcgcgagcaa	aatttaagct	acaacaaggc	aaggcttgac	cgacaattgc	atgaagaatc	180
tgcttagggg	taggcgtttt	gcgctgcttc	gcgatgtacg	ggccagatat	acgcgttgac	240

Mit-0512.ST25.txt

attgattatt	gactagttat	taatagtaat	caattacggg	gtcattagtt	catagcccat	300
atatggagtt	ccgcgttaca	taacttacgg	taaatggccc	gcctggctga	ccgccaacg	360
acccccgccc	attgacgtca	ataatgacgt	atgttcccat	agtaacgcca	atagggactt	420
tccattgacg	tcaatgggtg	gagtatttac	ggtaaactgc	ccacttggca	gtacatcaag	480
tgtatcatat	gccaaagtacg	ccccctattg	acgtcaatga	cggtaaattg	cccgcctggc	540
attatgccc	gtacatgacc	ttatgggact	ttcctacttg	gcagtacatc	tacgtattag	600
tcatcgctat	taccatggtg	atgcggtttt	ggcagtacat	caatgggcgt	ggatagcgg	660
ttgactcacg	gggatttcca	agtctccacc	ccattgacgt	caatgggagt	ttgttttggc	720
acaaaaatca	acgggacttt	ccaaaatgtc	gtaacaactc	cgccccattg	acgcaaattg	780
gcggtaggcg	tgtacggtgg	gaggtctata	taagcagcgc	gttttgccctg	tactgggtct	840
ctctggttag	accagatctg	agcctgggag	ctctctggct	aactagggaa	cccactgctt	900
aagcctcaat	aaagcttgcc	ttgagtgtct	caagtagtgt	gtgcccgtct	gttgtgtgac	960
tctggttaact	agagatccct	cagacccttt	tagtcagtgt	ggaaaatctc	tagcagtggc	1020
gcccgaacag	ggacttgaaa	gcgaaaggga	aaccagagga	gctctctcga	cgcaggactc	1080
ggcttgctga	agcgcgcacg	gcaagaggcg	aggggcggcg	actggtgagt	acgccaaaaa	1140
ttttgactag	cggaggctag	aaggagagag	atgggtgcga	gagcgtcagt	attaagcggg	1200
ggagaattag	atcgcgatgg	gaaaaaattc	ggttaaggcc	agggggaaag	aaaaaatata	1260
aattaaaaca	tatagtatgg	gcaagcaggg	agctagaacg	attcgcagtt	aatcctggcc	1320
tgttagaaac	atcagaaggc	tgtagacaaa	tactgggaca	gctacaacca	tcccttcaga	1380
caggatcaga	agaacttaga	tcattatata	atacagtagc	aaccctctat	tgtgtgcatc	1440
aaaggataga	gataaaagac	accaaggaag	ctttagacaa	gatagaggaa	gagcaaaaca	1500
aaagtaagac	caccgcacag	caagcggccg	gccgcgctga	tcttcagacc	tggaggagga	1560
gatatgaggg	acaattggag	aagtgaatta	tataaatata	aagtagtaaa	aattgaacca	1620
ttaggagtag	caccaccaa	ggcaaagaga	agagtgggtc	agagagaaaa	aagagcagtg	1680
ggaataggag	ctttgttcct	tgggttcttg	ggagcagcag	gaagcactat	gggcgcagcg	1740
tcaatgacgc	tgacggtaca	ggccagacaa	ttattgtctg	gtatagtgca	gcagcagaac	1800
aatttgctga	gggctattga	ggcgcaacag	catctgttgc	aactcacagt	ctggggcatc	1860
aagcagctcc	aggcaagaat	cctggctgtg	gaaagatacc	taaaggatca	acagctcctg	1920
gggatttggg	gttgctctgg	aaaactcatt	tgcaccactg	ctgtgccttg	gaatgctagt	1980
tggagtaata	aatctctgga	acagatttgg	aatcacacga	cctggatgga	gtgggacaga	2040
gaaattaaca	attacacaag	cttaatacac	tccttaattg	aagaatcgca	aaaccagcaa	2100

Mit-0512.ST25.txt

gaaaagaatg	aacaagaatt	attggaatta	gataaatggg	caagtttgtg	gaattggttt	2160
aacataacaa	attggctgtg	gtatataaaa	ttattcataa	tgatagtagg	aggcttggtg	2220
ggtttaagaa	tagtttttgc	tgtactttct	atagtgaata	gagttaggca	gggatattca	2280
ccattatcgt	ttcagaccca	cctcccaacc	ccgaggggac	ccgacaggcc	cgaaggaata	2340
gaagaagaag	gtggagagag	agacagagac	agatccattc	gattagtga	cggatcggca	2400
ctgcgtgctg	caattctgca	gacaaatggc	agtattcatc	cacaatttta	aaagaaaagg	2460
ggggattggg	gggtacagt	caggggaaag	aatagtagac	ataatagcaa	cagacataca	2520
aactaaagaa	ttacaaaaac	aaattacaaa	aattcaaaat	tttcgggttt	attacagggg	2580
cagcagagat	ccagtttggt	tagtaccggg	cccgtcttag	acggttgatc	tggcctccgc	2640
gccgggtttt	ggcgctccc	gcgggcgccc	ccctcctcac	ggcgagcgct	gccacgtcag	2700
acgaagggcg	caggagcgtc	ctgatccttc	cgcccggacg	ctcaggacag	cggcccgtg	2760
ctcataagac	tcggccttag	aaccccagta	tcagcagaag	gacattttag	gacgggactt	2820
gggtgactct	agggcactgg	ttttctttcc	agagagcgga	acaggcgagg	aaaagtagtc	2880
ccttctcggc	gattctgcgg	agggatctcc	gtggggcggt	gaacgccgat	gattatataa	2940
ggacgcgccg	ggtgtggcac	agctagttcc	gtcgcagccg	ggatttgggg	cgcggttctt	3000
gtttgtggat	cgctgtgatc	gtcacttggt	gagtagcggg	ctgctgggct	ggccggggct	3060
ttcgtggccg	ccgggccgct	cgggtgggacg	gaagcgtgtg	gagagaccgc	caagggctgt	3120
agtctgggtc	cgcgagcaag	gttgccctga	actggggggt	ggggggagcg	cagcaaatg	3180
gcggctgttc	ccgagtcttg	aatggaagac	gcttgtgagg	cgggctgtga	ggtcgttgaa	3240
acaaggtggg	gggcatgggtg	ggcggcaaga	acccaagggtc	ttgaggcctt	cgctaattgcg	3300
ggaaagctct	tattcggggtg	agatgggctg	gggcaccatc	tggggaccct	gacgtgaagt	3360
ttgtcactga	ctggagaact	cggtttgtcg	tctgttgcg	gggcggcagt	tatgcggtgc	3420
cgttgggcag	tgcacccgta	cctttgggag	cgcgcgccct	cgctgtgtcg	tgacgtcacc	3480
cgttctgttg	gcttataatg	caggggtggg	ccacctgccg	gtaggtgtgc	ggtaggcttt	3540
tctccgtcgc	aggacgcagg	gttcgggcct	agggtaggct	ctcctgaatc	gacaggcgcc	3600
ggacctctgg	tgaggggagg	gataagtga	gcgtcagttt	ctttggtcgg	ttttatgtac	3660
ctatcttctt	aagtagctga	agctccggtt	ttgaactatg	cgctcggggg	tggcgagtgt	3720
gttttgtgaa	gttttttagg	caccttttga	aatgtaatca	tttgggtcaa	tatgtaattt	3780
tcagtgttag	actagtaaat	tgtccgctaa	attctggccg	tttttggttt	ttttgttaga	3840
cgaagctaac	gcgctagccg	ttaattaagc	ctcgaggtcg	acggtatcga	taagctcgct	3900
tcacgagatt	ccagcagggtc	gagggaccta	ataacttcgt	atagcataca	ttatacgaag	3960
ttatattaag	ggttccaagc	ttaagcggcc	gcgccaccat	ggcctcctcc	gagaacgtca	4020

Mit-0512.ST25.txt

tcaccgagtt	catgcgcttc	aaggtgcgca	tggagggcac	cgtgaacggc	cacgagttcg	4080
agatcgaggg	cgagggcgag	ggccgcccct	acgagggcca	caacaccgtg	aagctgaagg	4140
tgaccaaggg	cggccccctg	cccttcgcct	gggacatcct	gtccccccag	ttccagtacg	4200
gctccaaggt	gtacgtgaag	caccccgcg	acatccccga	ctacaagaag	ctgtccttcc	4260
ccgagggctt	caagtgggag	cgcgtgatga	acttcgagga	cggcggcggtg	gcgaccgtga	4320
cccaggactc	ctccctgcag	gacggctgct	tcatctacaa	ggtgaagttc	atcggcggtga	4380
acttcccctc	cgacggcccc	gtgatgcaga	agaagaccat	gggctgggag	gcctccaccg	4440
agcgcctgta	cccccgcgac	ggcgtgctga	agggcgagac	ccacaaggcc	ctgaagctga	4500
aggacggcgg	ccactacctg	gtggagttca	agtccatcta	catggccaag	aagcccgtgc	4560
agctgcccgg	ctactactac	gtggacgcca	agctggacat	cacctcccac	aacgaggact	4620
acaccatcgt	ggagcagtag	gagcgcaccg	agggccgcca	ccacctgttc	ctgatgcatg	4680
ccccgggatg	gcgcgccatg	gatccgcgaa	ttcgtcgagg	gacctataaa	cttcgtatag	4740
catacattat	acgaagttat	acatgtttta	gggttccggt	tccactaggt	acaattcgat	4800
atcaagctta	tcgataatca	acctctggat	tacaaaattt	gtgaaagatt	gactgggtatt	4860
cttaactatg	ttgctccttt	tacgctatgt	ggatacgctg	ctttaatgcc	tttgtatcat	4920
gctattgctt	cccgtatggc	tttcattttc	tcctccttgt	ataaatcctg	gttgctgtct	4980
ctttatgagg	agttgtggcc	cgttgtcagg	caacgtggcg	tgggtgtgcac	tgtgtttgct	5040
gacgcaaccc	ccactggttg	gggcattgcc	accacctgtc	agctcctttc	cgggactttc	5100
gctttccccc	tccctattgc	cacggcgga	ctcatcgccg	cctgccttgc	ccgctgctgg	5160
acaggggctc	ggctgttggg	cactgacaat	tccgtggtgt	tgtcggggaa	atcatcgccc	5220
tttccttggc	tgctcgccctg	tgttgccacc	tggattctgc	gcgggacgtc	cttctgctac	5280
gtcccttcgg	ccctcaatcc	agcggacctt	ccttcccgcg	gcctgctgcc	ggctctgcgg	5340
cctcttccgc	gtcttcgcct	tcgccctcag	acgagtcgga	tctccctttg	ggccgcctcc	5400
ccgcatcgat	accgtcgacc	tcgatcgaga	cctagaaaaa	catggagcaa	tcacaagtag	5460
caatacagca	gctaccaatg	ctgattgtgc	ctggctagaa	gcacaagagg	aggaggaggt	5520
gggtttttcca	gtcacacctc	aggtaccttt	aagaccaatg	acttacaagg	cagctgtaga	5580
tcttagccac	tttttaaaag	aaaagggggg	actggaaggg	ctaattcact	cccaacgaag	5640
acaagatatc	cttgatctgt	ggatctacca	cacacaaggc	tacttccctg	attggcagaa	5700
ctacacacca	gggccaggga	tcagatatcc	actgaccttt	ggatggtgct	acaagctagt	5760
accagttgag	caagagaagg	tagaagaagc	caatgaagga	gagaacaccc	gcttggtaca	5820
ccctgtgagc	ctgcatggga	tggatgaccc	ggagagagaa	gtattagagt	ggaggtttga	5880

Mit-0512.ST25.txt

cagccgccta	gcatttcatc	acatggcccc	agagctgcat	ccggactgta	ctgggtctct	5940
ctgggttagac	cagatctgag	cctgggagct	ctctggctaa	ctaggaacc	cactgcttaa	6000
gcctcaataa	agcttgccct	gagtgttca	agtagtgtgt	gcccgtctgt	tgtgtgactc	6060
tggtactag	agatccctca	gaccctttta	gtcagtgtgg	aaaatctcta	gcagcatgtg	6120
agcaaaaggc	cagcaaaagg	ccaggaaccg	taaaaaggcc	gcgttgctgg	cgtttttcca	6180
taggctccgc	ccccctgacg	agcatcaca	aaatcgacgc	tcaagtcaga	ggtggcgaaa	6240
cccgacagga	ctataaagat	accaggcggt	tccccctgga	agctccctcg	tgcgctctcc	6300
tgttccgacc	ctgccgctta	ccggatacct	gtccgccttt	ctcccttcgg	gaagcgtggc	6360
gctttctcat	agctcacgct	gtaggtatct	cagttcggtg	taggtcggtc	gctccaagct	6420
gggctgtgtg	cacgaacccc	ccgttcagcc	cgaccgctgc	gccttatccg	gtaactatcg	6480
tcttgagtcc	aacccggtaa	gacacgactt	atcgccactg	gcagcagcca	ctggtaacag	6540
gattagcaga	gcgaggtatg	taggcggtgc	tacagagttc	ttgaagtggg	ggcctaacta	6600
cggctacact	agaagaacag	tatttggtat	ctgcgctctg	ctgaagccag	ttaccttcgg	6660
aaaaagagtt	ggtagctctt	gatccggcaa	acaaaccacc	gctggtagcg	gtgggttttt	6720
tgtttgcaag	cagcagatta	cgcgcagaaa	aaaaggatct	caagaagatc	ctttgatctt	6780
ttctacgggg	tctgacgctc	agtggaacga	aaactcacgt	taagggattt	tggtcatgag	6840
attatcaaaa	aggatcttca	cctagatcct	tttaaattaa	aatgaagtt	ttaaatcaat	6900
ctaaagtata	tatgagtaaa	cttggtctga	cagttaccaa	tgcttaatca	gtgaggcacc	6960
tatctcagcg	atctgtctat	ttcgttcatc	catagttgcc	tgactccccg	tcgtgtagat	7020
aactacgata	cgaggagggt	taccatctgg	ccccagtgtc	gcaatgatac	cgcgagaccc	7080
acgctcaccg	gctccagatt	tatcagcaat	aaaccagcca	gccggaaggg	ccgagcgag	7140
aagtggtcct	gcaactttat	ccgcctccat	ccagtctatt	aattgttgcc	gggaagctag	7200
agtaagtagt	tcgccagtta	atagtttgcg	caacgttggt	gccattgcta	caggcatcgt	7260
ggtgtcacgc	tcgtcgtttg	gtatggcttc	attcagctcc	ggttcccaac	gatcaaggcg	7320
agttacatga	tcccccatgt	tgtgcaaaaa	agcggtagc	tccttcggtc	ctccgatcgt	7380
tgtcagaagt	aagttggccg	cagtgttatc	actcatgggt	atggcagcac	tgcataattc	7440
tcttactgtc	atgccatccg	taagatgctt	ttctgtgact	ggtgagtact	caaccaagtc	7500
attctgagaa	tagtgtatgc	ggcgaccgag	ttgctcttgc	ccggcgtaaa	tacgggataa	7560
taccgcgcca	catagcagaa	ctttaaaagt	gctcatcatt	ggaaaacgtt	cttcggggcg	7620
aaaactctca	aggatcttac	cgctgttgag	atccagttcg	atgtaacca	ctcgtgcacc	7680
caactgatct	tcagcatctt	ttactttcac	cagcgtttct	gggtgagcaa	aaacaggaag	7740
gcaaaatgcc	gcaaaaaagg	gaataagggc	gacacggaaa	tgttgaatac	tcatactctt	7800

Mit-0512.ST25.txt

cctttttcaa tattattgaa gcatttatca gggttattgt ctcatgagcg gatacatatt 7860
tgaatgtatt tagaaaaata aacaaatagg ggttccgcgc acatttcccc gaaaagtgcc 7920
acctgac 7927

<210> 8
<211> 7350
<212> DNA
<213> Artificial

<220>
<223> lentiviral vector sequence

<400> 8
gtcgcaggat cgggagatct cccgatcccc tatggtgcac tctcagtaca atctgctctg 60
atgccgcata gttaagccag tatctgctcc ctgcttggtg gttggaggtc gctgagtagt 120
gcgcgagcaa aatttaagct acaacaaggc aaggcttgac cgacaattgc atgaagaatc 180
tgcttaggggt taggcgtttt gcgctgcttc gcgatgtacg ggccagatat acgcgttgac 240
attgattatt gactagttat taatagtaat caattacggg gtcattagtt catagcccat 300
atatggagtt ccgcgttaca taacttacgg taaatggccc gcctggctga ccgccaacg 360
acccccgccc attgacgtca ataatgacgt atgttcccat agtaacgcca atagggactt 420
tccattgacg tcaatgggtg gagtatttac ggtaaactgc ccacttgga gtacatcaag 480
tgtatcatat gccaaagtacg cccctattg acgtcaatga cggtaaattg cccgcctggc 540
attatgcca gtacatgacc ttatgggact ttcctacttg gcagtacatc tacgtattag 600
tcatcgctat taccatgggt atgcggtttt ggcagtacat caatgggcgt ggatagcgg 660
ttgactcacg gggatttcca agtctccacc ccattgacgt caatgggagt ttgttttggc 720
acaaaatca acgggacttt ccaaaatgtc gtaacaactc cgccccattg acgcaaatgg 780
gcggtaggcg tgtacggtgg gaggtctata taagcagcgc gttttgcctg tactgggtct 840
ctctggtttag accagatctg agcctgggag ctctctggct aactagggaa cccactgctt 900
aagcctcaat aaagcttgcc ttgagtgtct caagtagtgt gtgcccgtct gttgtgtgac 960
tctggtaact agagatccct cagacccttt tagtcagtgt ggaaaatctc tagcagtggc 1020
gccgaacag ggacttgaaa gcgaaaggga aaccagagga gctctctcga cgcaggactc 1080
ggcttgctga agcgcgcacg gcaagaggcg aggggcggcg actggtgagt acgcaaaaaa 1140
ttttgactag cggaggctag aaggagagag atgggtgcga gagcgtcagt attaagcggg 1200
ggagaattag atcgcgatgg gaaaaaatc gggttaaggcc aggggggaaag aaaaaatata 1260
aattaaaaca tatagtatgg gcaagcaggg agctagaacg attcgcagtt aatcctggcc 1320
tgttagaac atcagaaggc tgtagacaaa tactgggaca gctacaacca tcccttcaga 1380

Mit-0512.ST25.txt

caggatcaga	agaacttaga	tcattatata	atacagtagc	aaccctctat	tgtgtgcatc	1440
aaaggataga	gataaaagac	accaaggaag	ctttagacaa	gatagaggaa	gagcaaaaca	1500
aaagtaagac	caccgcacag	caagcggccg	gccgcgctga	tcttcagacc	tggaggagga	1560
gatatgaggg	acaattggag	aagtgaatta	tataaatata	aagtagtaaa	aattgaacca	1620
ttaggagtag	caccaccaa	ggcaaagaga	agagtgggtgc	agagagaaaa	aagagcagtg	1680
ggaataggag	ctttgttcct	tgggttcctg	ggagcagcag	gaagcactat	gggcgcagcg	1740
tcaatgacgc	tgacggtaca	ggccagacaa	ttattgtctg	gtatagtgc	gcagcagaac	1800
aatttgctga	gggctattga	ggcgcaacag	catctgttgc	aactcacagt	ctggggcatc	1860
aagcagctcc	aggcaagaat	cctggctgtg	gaaagatacc	taaaggatca	acagctcctg	1920
gggatttggg	gttgctctgg	aaaactcatt	tgcaccactg	ctgtgccttg	gaatgctagt	1980
tggagtaata	aatctctgga	acagatttgg	aatcacacga	cctggatgga	gtgggacaga	2040
gaaattaaca	attacacaag	cttaatacac	tccttaattg	aagaatcgca	aaaccagcaa	2100
gaaaagaatg	aacaagaatt	attggaatta	gataaatggg	caagtttgtg	gaattggttt	2160
aacataacaa	attggctgtg	gtatataaaa	ttattcataa	tgatagtagg	aggcttggt	2220
ggtttaagaa	tagtttttgc	tgtactttct	atagtgaata	gagttaggca	gggatattca	2280
ccattatcgt	ttcagaccca	cctcccaacc	ccgaggggac	ccgacaggcc	cgaaggaata	2340
gaagaagaag	gtggagagag	agacagagac	agatccattc	gattagtga	cggatcggca	2400
ctgcgtgcgc	caattctgca	gacaaatggc	agtattcatc	cacaatttta	aaagaaaagg	2460
ggggattggg	gggtacagtg	caggggaaag	aatagtagac	ataatagcaa	cagacataca	2520
aactaaagaa	ttacaaaaac	aaattacaaa	aattcaaaat	tttcgggttt	attacaggg	2580
cagcagagat	ccagtttggg	tagtaccggg	cccgtcttag	acggttaacg	cgctagccgt	2640
taattaagcc	tcgaggtcga	cggtatcgat	aagctcgctt	cacgagattc	cagcaggtcg	2700
agggacctaa	taacttcgta	tagcatacat	tatacgaagt	tatattaagg	gttccaagct	2760
taagcggccg	cgtggataac	cgtattaccg	ccatgcatta	gttattaata	gtaatcaatt	2820
acgggggtcat	tagttcatag	cccatatatg	gagttccgcg	ttacataact	tacggtaaat	2880
ggcccgctg	gctgaccgcc	caacgacccc	cgccattga	cgtcaataat	gacgtatgtt	2940
cccatagtaa	cgccaatagg	gactttccat	tgacgtcaat	gggtggagta	tttacggtaa	3000
actgcccact	tggcagtaca	tcaagtgtat	catatgccaa	gtacgcccc	tattgacgtc	3060
aatgacggta	aatggcccg	ctggcattat	gcccagtaca	tgaccttatg	ggactttcct	3120
acttggcagt	acatctacgt	attagtcatc	gctattacca	tggatgatgcg	gttttggcag	3180
tacatcaatg	ggcgtggata	gcggtttgac	tcacggggat	ttccaagtct	ccacccatt	3240
gacgtcaatg	ggagtttgtt	ttggcaccaa	aatcaacggg	actttccaaa	atgtcgtaac	3300

Mit-0512.ST25.txt

aactccgccc cattgacgca aatgggcggt aggcgtgtac ggtgggaggt ctatataagc	3360
agagctgggt tagtgaaccg tcagatccgc tagcgctacc ggtcgccacc atggtgagca	3420
agggcgagga gctgttcacc ggggtggtgc ccatcctggt cgagctggac ggcgacgtaa	3480
acggccacaa gttcagcgtg tccggcgagg gcgagggcga tgccacctac ggcaagctga	3540
ccctgaagtt catctgcacc accggcaagc tgcccgtgcc ctggcccacc ctcgtgacca	3600
ccctgacctt cggcgtgcag tgcttcagcc gctaccccga ccacatgaag cagcacgact	3660
tcttcaagtc cgccatgccc gaaggctacg tccaggagcg caccatcttc ttcaaggacg	3720
acggcaacta caagaccgcg gccgaggtga agttcgaggg cgacaccctg gtgaaccgca	3780
tcgagctgaa gggcatcgac ttcaaggagg acggcaacat cctggggcac aagctggagt	3840
acaactacaa cagccacaac gtctatatca tggccgacaa gcagaagaac ggcacatcaag	3900
tgaacttcaa gatccgccac aacatcgagg acggcagcgt gcagctcgcc gaccactacc	3960
agcagaacac ccccatcggc gacggccccg tgctgctgcc cgacaaccac tacctgagca	4020
cccagtcgcg cctgagcaaa gaccccaacg agaagcgcga tcacatggtc ctgctggagt	4080
tcgtgaccgc cgccgggatc actctcggca tggacgagct gtacaagtag gaattcgtcg	4140
agggacctaa taacttcgta tagcatacat tatacgaagt tatacatggt taagggttcc	4200
ggttccacta ggtacaattc gatatcaagc ttatcgataa tcaacctctg gattacaaaa	4260
tttgtgaaag attgactggt attcttaact atgttgctcc ttttacgcta tgtggatacg	4320
ctgctttaat gcctttgtat catgctattg cttcccgtat ggctttcatt ttctcctcct	4380
tgtataaatc ctggttgctg tctctttatg aggagtgtgt gcccgttgtc aggcaacgtg	4440
gcgtggtgtg cactgtgttt gctgacgcaa cccccactgg ttggggcatt gccaccacct	4500
gtcagctcct ttccgggact ttcgctttcc ccctccctat tgccacggcg gaactcatcg	4560
ccgcctgcct tgcccgtgc tggacagggg ctcggtgtgt gggcactgac aattccgtgg	4620
tggtgtcggg gaaatcatcg tcctttcctt ggctgctcgc ctgtgttgcc acctggattc	4680
tgcgcgggac gtccttctgc tacgtccctt cggccctcaa tccagcggac cttccttccc	4740
gcggcctgct gccggctctg cggcctcttc cgcgtcttcg ccttcgccct cagacgagtc	4800
ggatctccct ttggggccgc tccccgcac gataccgtcg acctcgatcg agacctagaa	4860
aaacatggag caatcacaag tagcaataca gcagctacca atgctgattg tgcctggcta	4920
gaagcacaag aggaggagga ggtgggtttt ccagtcacac ctgaggtacc tttaagacca	4980
atgacttaca aggcagctgt agatcttagc cactttttta aagaaaaggg gggactggaa	5040
gggctaattc actcccaacg aagacaagat atccttgatc tgtggatcta ccacacacaa	5100
ggctacttcc ctgattggca gaactacaca ccagggccag ggatcagata tccactgacc	5160

Mit-0512.ST25.txt

tttggatggt gctacaagct agtaccagtt gagcaagaga aggtagaaga agccaatgaa	5220
ggagagaaca cccgcttggt acaccctgtg agcctgcatg ggatggatga cccggagaga	5280
gaagtattag agtggagggt tgacagccgc ctagcatttc atcacatggc ccgagagctg	5340
catccggact gtactgggtc tctctggtta gaccagatct gagcctggga gctctctggc	5400
taactaggga acccactgct taagcctcaa taaagcttgc cttgagtgtc tcaagtagtg	5460
tgtgcccgtc tgttgtgtga ctctggtaac tagagatccc tcagaccctt ttagtcagtg	5520
tggaaaatct ctagcagcat gtgagcaaaa ggccagcaaa aggccaggaa ccgtaaaaag	5580
gccgcgttgc tggcgttttt ccataggctc cgccccctg acgagcatca caaaaatcga	5640
cgctcaagtc agaggtggcg aaaccgcaca ggactataaa gataccaggc gtttccccct	5700
ggaagctccc tcgtgcgctc tcctgttccg accctgccgc ttaccggata cctgtccgcc	5760
tttctccctt cgggaagcgt ggcgctttct catagctcac gctgtaggta tctcagttcg	5820
gtgtaggtcg ttcgctccaa gctgggctgt gtgcacgaac ccccggttca gcccgaccgc	5880
tgcgcttat ccggaacta tcgtcttgag tccaaccgg taagacacga cttatcgcca	5940
ctggcagcag cactggtaa caggattagc agagcgaggt atgtaggcgg tgctacagag	6000
ttcttgaagt ggtggcctaa ctacggctac actagaagaa cagtatttgg tatctgcgct	6060
ctgctgaagc cagttacctt cgaaaaaga gttggtagct cttgatccgg caaacaacc	6120
accgctggta gcggtggttt ttttgtttgc aagcagcaga ttacgcgcag aaaaaaggga	6180
tctcaagaag atcctttgat cttttctacg gggcttgacg ctcagtggaa cgaaaactca	6240
cgttaaggga ttttggatcat gagattatca aaaaggatct tcacctagat ctttttaa	6300
taaaaatgaa gttttaaatc aatctaaagt atatatgagt aaacttggtc tgacagttac	6360
caatgcttaa tcagtgaggc acctatctca gcgatctgtc tatttcgttc atccatagtt	6420
gcctgactcc ccgtcgtgta gataactacg atacgggagg gcttaccatc tggccccagt	6480
gctgcaatga taccgcgaga cccacgctca ccggctccag atttatcagc aataaaccag	6540
ccagccggaa gggccgagcg cagaagtggc cctgcaactt tatccgcctc catccagtct	6600
attaattgtt gccgggaagc tagagtaagt agttcgccag ttaatagttt gcgcaacgtt	6660
gttgccattg ctacaggcat cgtgggtgtc cgctcgtcgt ttggtatggc ttcattcagc	6720
tccggttccc aacgatcaag gcgagttaca tgatcccca tgttgtgcaa aaaagcggtt	6780
agctccttcg gtcctccgat cgttgctcaga agtaagttgg ccgcagtgtt atcactcatg	6840
gttatggcag cactgcataa ttctcttact gtcatgccat ccgtaagatg cttttctgtg	6900
actggtgagt actcaaccaa gtcattctga gaatagtgtg tgccggcgacc gagttgctct	6960
tgcccgcgct caatacggga taataccgcg ccacatagca gaactttaaa agtgctcatc	7020
attggaaaac gttcttcggg gcgaaaactc tcaaggatct taccgctgtt gagatccagt	7080

Mit-0512.ST25.txt

tcgatgtaac ccactcgtgc acccaactga tcttcagcat cttttacttt caccagcggt	7140
tctgggtgag caaaaacagg aaggcaaat gccgcaaaa agggaataag ggcgacacgg	7200
aaatgttgaa tactcatact cttccttttt caatattatt gaagcattta tcagggttat	7260
tgtctcatga gcggatacat atttgaatgt atttagaaaa ataaacaaat aggggttccg	7320
cgcacatttc cccgaaaagt gccacctgac	7350

<210> 9
 <211> 7650
 <212> DNA
 <213> Artificial

<220>
 <223> lentiviral vector sequence

<400> 9	
gtcgacggat cgggagatct cccgatcccc tatggtgcac tctcagtaca atctgctctg	60
atgccgcata gttaagccag tatctgctcc ctgcttggtg gttggaggtc gctgagtagt	120
gcgcgagcaa aatttaagct acaacaaggc aaggcttgac cgacaattgc atgaagaatc	180
tgcttagggg taggcgtttt gcgctgcttc gcgatgtacg ggccagatat acgcgttgac	240
attgattatt gactagttat taatagtaat caattacggg gtcattagtt catagcccat	300
atatggagtt ccgcgttaca taacttacgg taaatggccc gcctggctga ccgccaacg	360
acccccgcc attgacgtca ataatgacgt atgttcccat agtaacgcca atagggactt	420
tccattgacg tcaatgggtg gagtatttac ggtaaactgc ccacttggca gtacatcaag	480
tgtatcatat gccaaagtacg cccctatttg acgtcaatga cggtaaattg cccgcctggc	540
attatgccca gtacatgacc ttatgggact ttcctacttg gcagtacatc tacgtattag	600
tcatcgctat taccatgggt atgcggtttt ggcagtacat caatgggcgt ggatagcgg	660
ttgactcacg gggatttcca agtctccacc ccattgacgt caatgggagt ttgttttggc	720
acaaaatca acgggacttt ccaaaatgtc gtaacaactc cgccccattg acgcaaatgg	780
gcggtaggcg tgtacgggtg gaggtctata taagcagcgc gttttgcctg tactgggtct	840
ctctggttag accagatctg agcctgggag ctctctggct aactagggaa cccactgctt	900
aagcctcaat aaagcttgcc ttgagtgtt caagtagtgt gtgcccgtct gttgtgtgac	960
tctggtaact agagatccct cagacccttt tagtcagtgt ggaaaatctc tagcagtggc	1020
gcccgaacag ggacttgaaa gcgaaaggga aaccagagga gctctctcga cgcaggactc	1080
ggcttgctga agcgcgcacg gcaagaggcg aggggcggcg actggtgagt acgcaaaaaa	1140
ttttgactag cggaggctag aaggagagag atgggtgcga gagcgtcagt attaacggg	1200
ggagaattag atcgcgatgg gaaaaaattc ggttaaggcc agggggaaaag aaaaaatata	1260

Mit-0512.ST25.txt

aattaaaaca	tatagtatgg	gcaagcaggg	agctagaacg	attcgcagtt	aatcctggcc	1320
tgtagaaaac	atcagaaggc	tgtagacaaa	tactgggaca	gctacaacca	tcccttcaga	1380
caggatcaga	agaacttaga	tcattatata	atacagtagc	aaccctctat	tgtgtgcatc	1440
aaaggataga	gataaaagac	accaaggaag	ctttagacaa	gatagaggaa	gagcaaaaca	1500
aaagtaagac	caccgcacag	caagcggccg	gccgcgctga	tcttcagacc	tggaggagga	1560
gatatgaggg	acaattggag	aagtgaatta	tataaatata	aagtagtaaa	aattgaacca	1620
ttaggagtag	caccaccaa	ggcaaagaga	agagtgggtc	agagagaaaa	aagagcagtg	1680
ggaataggag	ctttgttcct	tgggttcttg	ggagcagcag	gaagcactat	gggcgcagcg	1740
tcaatgacgc	tgacggtaca	ggccagacaa	ttattgtctg	gtatagtgc	gcagcagaac	1800
aatttgctga	gggctattga	ggcgcaacag	catctgttgc	aactcacagt	ctggggcatc	1860
aagcagctcc	aggcaagaat	cctggctgtg	gaaagatacc	taaaggatca	acagctcctg	1920
gggatttggg	gttgctctgg	aaaactcatt	tgcaccactg	ctgtgccttg	gaatgctagt	1980
tggagtaata	aatctctgga	acagatttgg	aatcacacga	cctggatgga	gtgggacaga	2040
gaaattaaca	attacacaag	cttaatacac	tccttaattg	aagaatcgca	aaaccagcaa	2100
gaaaagaatg	aacaagaatt	attggaatta	gataaatggg	caagtttgtg	gaattggttt	2160
aacataacaa	attggctgtg	gtatataaaa	ttattcataa	tgatagtagg	aggcttggtg	2220
ggtttaagaa	tagtttttgc	tgtactttct	atagtgaata	gagttaggca	gggatattca	2280
ccattatcgt	ttcagaccca	cctcccaacc	ccgaggggac	ccgacaggcc	cgaaggaata	2340
gaagaagaag	gtggagagag	agacagagac	agatccattc	gattagtga	cggatcggca	2400
ctgcgtgctg	caattctgca	gacaaatggc	agtattcatc	cacaatttta	aaagaaaagg	2460
ggggattggg	gggtacagtg	caggggaaag	aatagtagac	ataatagcaa	cagacataca	2520
aactaaagaa	ttacaaaaac	aaattacaaa	aattcaaaat	tttcgggttt	attacagggg	2580
cagcagagat	ccagtttggg	tagtaccggg	cccgtcttag	agatccgacg	ccgccatctc	2640
tagggccgcg	ccggccccct	cgcacagact	tgtgggagaa	gctcggctac	tcccttgccc	2700
cggttaattt	gcatataata	tttcctagta	actatagagg	cttaatgtgc	gataaaagac	2760
agataatctg	ttctttttta	tactagctac	attttacatg	ataggcttgg	atttctataa	2820
gagatacaaa	tactaaatta	ttatttttaa	aaacagcaca	aaaggaaact	caccctaact	2880
gtaaagtaat	tgtgtgtttt	gagactataa	atatcccttg	gagaaaagcc	ttgttaacgc	2940
gcggtgaccc	tcgaggtcga	cggtatcgat	aagctcgctt	cacgagattc	cagcaggtcg	3000
agggacctaa	taacttcgta	tagcatacat	tatacgaagt	tatattaagg	gttccaagct	3060
taagcggccg	cgtggataac	cgtattaccg	ccatgcatta	gttattaata	gtaatcaatt	3120
acgggggtcat	tagttcatag	cccatatatg	gagttccgcg	ttacataact	tacggtaaat	3180

Mit-0512.ST25.txt

ggccccgctg	gctgaccgcc	caacgacccc	cgcccattga	cgtcaataat	gacgtatggt	3240	
cccatagtaa	cgccaatagg	gacttttccat	tgacgtcaat	gggtggagta	tttacggtaa	3300	
actgcccact	tggcagtaca	tcaagtgtat	catatgccaa	gtacgcccc	tattgacgtc	3360	
aatgacggta	aatggcccg	ctggcattat	gcccagtaca	tgaccttatg	ggactttcct	3420	
acttggcagt	acatctacgt	attagtcatc	gctattacca	tggtgatg	gttttggcag	3480	
tacatcaatg	ggcgtggata	gcggtttgac	tcacggggat	ttccaagtct	ccacccatt	3540	
gacgtcaatg	ggagtttggt	ttggcaccaa	aatcaacggg	actttccaaa	atgtcgtaac	3600	
aactccgccc	cattgacgca	aatggg	cggt	aggcgtgtac	ggtgggaggt	ctatataagc	3660
agagctgggt	tagtgaaccg	tcagatccgc	tagcgctacc	ggtcgccacc	atggtgagca	3720	
agggcgagga	gctgttcacc	ggggtgggtg	ccatcctggt	cgagctggac	ggcgacgtaa	3780	
acggccacaa	gttcagcgtg	tccggcgagg	gcgaggcgga	tgccacctac	ggcaagctga	3840	
ccctgaagtt	catctgcacc	accggcaagc	tgcccgtgcc	ctggcccacc	ctcgtgacca	3900	
ccctgacct	cggcgtgcag	tgcttcagcc	gctaccccga	ccacatgaag	cagcacgact	3960	
tcttcaagtc	cgccatgccc	gaaggctacg	tccaggagcg	caccatcttc	ttcaaggacg	4020	
acggcaacta	caagaccgc	gccgaggtga	agttcgaggg	cgacaccctg	gtgaaccgca	4080	
tcgagctgaa	gggcatcgac	ttcaaggagg	acggcaacat	cctggggcac	aagctggagt	4140	
acaactacaa	cagccacaac	gtctatatca	tggccgacaa	gcagaagaac	ggcatcaagg	4200	
tgaacttcaa	gatccgccac	aacatcgagg	acggcagcgt	gcagctcgcc	gaccactacc	4260	
agcagaacac	ccccatcggc	gacggccccg	tgctgctgcc	cgacaaccac	tacctgagca	4320	
cccagtcgc	cctgagcaaa	gaccccaacg	agaagcgga	tcacatggtc	ctgctggagt	4380	
tcgtgaccgc	cgccgggata	actctcgga	tggacgagct	gtacaagtag	gaattcgctg	4440	
agggacctaa	taacttcgta	tagcatacat	tatacgaagt	tatacatggt	taagggttcc	4500	
ggttccacta	ggtacaattc	gatatacagc	ttatcgataa	tcaacctctg	gattacaaaa	4560	
tttgtgaaag	attgactggg	attcttaact	atgttgctcc	ttttacgcta	tgtggatacg	4620	
ctgctttaat	gcctttgtat	catgctattg	cttcccgtat	ggctttcatt	ttctcctcct	4680	
tgtataaatc	ctggttgctg	tctctttatg	aggagttgtg	gcccgttgtc	aggcaacgtg	4740	
gcgtgggtgtg	cactgtgttt	gctgacgcaa	ccccactgg	ttggggcatt	gccaccacct	4800	
gtcagctcct	ttccgggact	ttcgctttcc	ccctccctat	tgccacggcg	gaactcatcg	4860	
ccgcctgcct	tgcccgtgc	tggacagggg	ctcggctgtt	gggcactgac	aattccgtgg	4920	
tgttgtcggg	gaaatcatcg	tcctttcctt	ggctgctcgc	ctgtgttgcc	acctggattc	4980	
tgcgcgggac	gtccttctgc	tacgtccctt	cggccctcaa	tccagcggac	cttccttccc	5040	

Mit-0512.ST25.txt

gcggcctgct gccggctctg cggcctcttc cgcgctcttcg ccttcgccct cagacgagtc	5100
ggatctccct ttggggccgcc tccccgcacg gataccgtcg acctcgatcg agacctagaa	5160
aaacatggag caatcacaag tagcaataca gcagctacca atgctgattg tgcctggcta	5220
gaagcacaag aggaggagga ggtgggTTTT ccagtcacac ctcagggtacc ttttaagacca	5280
atgacttaca aggcagctgt agatcttagc cacttttttaa aagaaaaggg gggactggaa	5340
gggctaattc actcccaacg aagacaagat atccttgatc tgtggatcta ccacacacaa	5400
ggctacttcc ctgattggca gaactacaca ccagggccag ggatcagata tccactgacc	5460
tttggatggg gctacaagct agtaccagtt gagcaagaga aggtagaaga agccaatgaa	5520
ggagagaaca cccgcttggt acaccctgtg agcctgcatg ggatggatga cccggagaga	5580
gaagtattag agtggagggt tgacagccgc ctagcatttc atcacatggc ccgagagctg	5640
catccggact gtactgggtc tctctgggta gaccagatct gagcctggga gctctctggc	5700
taactagggg acccactgct taagcctcaa taaagcttgc cttgagtgtc tcaagtagtg	5760
tgtgcccgtc tgttgtgtga ctctggtaac tagagatccc tcagaccctt ttagtcagtg	5820
tggaaaatct ctagcagcat gtgagcaaaa ggccagcaaa aggccaggaa ccgtaaaaag	5880
gccgcgttgc tggcgTTTT ccataggctc cgccccctg acgagcatca caaaaatcga	5940
cgctcaagtc agagggtggcg aaacccgaca ggactataaa gataccaggc gtttccccct	6000
ggaagctccc tcgtgcgctc tcctgttccg accctgccgc ttaccggata cctgtccgcc	6060
tttctccctt cgggaagcgt ggcgctttct catagctcac gctgtaggta tctcagttcg	6120
gtgtaggtcg ttcgctccaa gctgggctgt gtgcacgaac ccccggttca gcccgaccgc	6180
tgcgccttat ccggtaacta tcgtcttgag tccaacccgg taagacacga cttatcgcca	6240
ctggcagcag cactgggtaa caggattagc agagcgagggt atgtaggcgg tgctacagag	6300
ttcttgaagt ggtggcctaa ctacggctac actagaagaa cagtatttgg tatctgcgct	6360
ctgctgaagc cagttacctt cggaaaaaga gttggtagct cttgatccgg caaacaacc	6420
accgctggta gcggtggttt ttttgtttgc aagcagcaga ttacgcgcag aaaaaagga	6480
tctcaagaag atcctttgat cttttctacg gggcttgacg ctcagtggaa cgaaaactca	6540
cgttaaggga ttttgggtcat gagattatca aaaaggatct tcacctagat ctttttaa	6600
taaaaatgaa gttttaaatc aatctaaagt atatatgagt aaacttggtc tgacagttac	6660
caatgcttaa tcagtgaggc acctatctca gcgatctgtc tatttcgttc atccatagtt	6720
gcctgactcc ccgtcgtgta gataactacg atacgggagg gcttaccatc tggccccagt	6780
gctgcaatga taccgcgaga cccacgctca ccggctccag atttatcagc aataaaccag	6840
ccagccggaa gggccgagcg cagaagtggg cctgcaactt tatccgcctc catccagtct	6900
attaattgtt gccgggaagc tagagtaagt agttcgccag ttaatagttt gcgcaacg	6960

Mit-0512.ST25.txt

```

gttgccattg ctacaggcat cgtggtgtca cgctcgtcgt ttggtatggc ttcattcagc 7020
tccggttccc aacgatcaag gcgagttaca tgatcccca tggttgcaa aaaagcggtt 7080
agctccttcg gtcctccgat cgttggtcaga agtaagttgg ccgcagtgtt atcactcatg 7140
gttatggcag cactgcataa ttctcttact gtcatgccat ccgtaagatg cttttctgtg 7200
actggtgagt actcaaccaa gtcattctga gaatagtgtg tgcggcgacc gagttgctct 7260
tgcccggcgt caatacggga taataccgcg ccacatagca gaactttaaa agtgctcatc 7320
attggaaaac gttcttcggg gcgaaaactc tcaaggatct taccgctgtt gagatccagt 7380
tcgatgtaac cactcgtgc acccaactga tcttcagcat cttttacttt caccagcgtt 7440
tctgggtgag caaaaacagg aaggcaaaat gccgcaaaaa agggaataag ggcgacacgg 7500
aaatgttgaa tactcatact cttccttttt caatattatt gaagcattta tcagggttat 7560
tgtctcatga gcgatacat atttgaatgt atttgaaaa ataaacaaat aggggttccg 7620
cgcacatttc cccgaaaagt gccacctgac 7650

```

```

<210> 10
<211> 9
<212> DNA
<213> Artificial

```

```

<220>
<223> Loop sequence

```

```

<400> 10
ttcaagaga 9

```

```

<210> 11
<211> 38
<212> DNA
<213> Artificial

```

```

<220>
<223> Sense oligonucleotides

```

```

<400> 11
cgctctagac gggttaacgcg ctagccgtta attaagcc 38

```

```

<210> 12
<211> 46
<212> DNA
<213> Artificial

```

```

<220>
<223> Antisense oligonucleotide

```

```

<400> 12
tcgaggctta attaacggct agcgcgttaa ccgtctagag cgggcc 46

```

```

<210> 13

```

<211> 43
 <212> DNA
 <213> Artificial

 <220>
 <223> MCS sense

 <400> 13
 ggccgccgat gcatgccccg ggatggcgcg ccatggatcc gcg 43

 <210> 14
 <211> 43
 <212> DNA
 <213> Artificial

 <220>
 <223> MCS antisense

 <400> 14
 aattcgcgga tccatggcgc gccatcccgg ggc atgcatc ggc 43

 <210> 15
 <211> 31
 <212> DNA
 <213> Artificial

 <220>
 <223> EGFP/5' NotI oligonucleotides

 <400> 15
 cggcgccgc gccacccatgg tgagcaagg c 31

 <210> 16
 <211> 30
 <212> DNA
 <213> Artificial

 <220>
 <223> EGFP/3'NsiI oligonucleotides

 <400> 16
 cgatgcatct tgtacagctc gtccatgccg 30

 <210> 17
 <211> 31
 <212> DNA
 <213> Artificial

 <220>
 <223> deRed2/5' NotI oligonucleotides

 <400> 17
 cggcgccgc gccacccatgg cctcctccga g 31

 <210> 18
 <211> 30
 <212> DNA
 <213> Artificial

<220>
 <223> dsRed2/3' NsiI oligonucleotides
 <400> 18
 cgatgcatca ggaacaggtg gtggcggccc 30
 <210> 19
 <211> 34
 <212> DNA
 <213> Artificial
 <220>
 <223> 5'CMV/NotI oligonucleotides
 <400> 19
 cggcggccgc gtggataacc gtattaccgc catg 34
 <210> 20
 <211> 35
 <212> DNA
 <213> Artificial
 <220>
 <223> 3' EGFP/stop/ECORI oligonucleotides
 <400> 20
 cggaattcct acttgtagag ctctgcatg ccgag 35
 <210> 21
 <211> 30
 <212> DNA
 <213> Artificial
 <220>
 <223> 5' xbaI/U6 oligonucleotides
 <400> 21
 gctctagaga tccgacgccg ccatctctag 30
 <210> 22
 <211> 43
 <212> DNA
 <213> Artificial
 <220>
 <223> 3' xhoI/BstEII/HpaI/U6 oligonucleotides
 <400> 22
 gcctcgaggg tcaccgcgcg ttaacaaggc ttttctccaa ggg 43
 <210> 23
 <211> 74
 <212> DNA
 <213> Artificial
 <220>
 <223> 5' EcoRI/LoxFix/PciI oligonucleotides

<400> 23
gcgaattcgt cgagggacct aataacttcg tatagcatac attatacgaa gttatacatg 60
tttaagggtt ccgg 74

<210> 24
<211> 25
<212> DNA
<213> Artificial

<220>
<223> 3' Pflm1/Rev oligonucleotide

<400> 24
aaggagctga caggtggtgg caatg 25

<210> 25
<211> 20
<212> DNA
<213> Artificial

<220>
<223> CD8 shRNA duplex sequence

<400> 25
tgctacaact actacatgac 20

<210> 26
<211> 59
<212> DNA
<213> Artificial

<220>
<223> Mena + sense

<400> 26
tgtcctgtgc ctggcctact ttcaagagaa gtaggccagg cacaggactt ttgggaaac 59

<210> 27
<211> 63
<212> DNA
<213> Artificial

<220>
<223> Mena + antisense

<400> 27
tcgagttccc aaaaagtcct gtgcctggcc tacttctctt gaaagtaggc caggcacagg 60
aca 63

<210> 28
<211> 58
<212> DNA
<213> Artificial

<220>

<223> Beta-catenin sense

<400> 28
tgtccagcgc ttggctgaac ttcaagagtg ttcagccaag cgctggactt tttggaaa 58

<210> 29
<211> 62
<212> DNA
<213> Artificial

<220>
<223> Beta antisense

<400> 29
tcgatttcca aaaagtccag cgcttggctg aacactcttg aagttcagcc aagcgctgga 60
ca 62

<210> 30
<211> 72
<212> DNA
<213> Artificial

<220>
<223> P53 sense

<400> 30
tggctctaagt ggagcccttc gagtgttaga agcttgtgac actcggaggg cttcacttgg 60
gcttttttga aa 72

<210> 31
<211> 77
<212> DNA
<213> Artificial

<220>
<223> P53 antisense

<400> 31
tcgatttcca aaaaggccca agtgaagccc tccgagtgtc acaagcttct aacactcgaa 60
gggctccact tagacca 77

<210> 32
<211> 21
<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 32
tggtgggtac ctagtggaac c 21

<210> 33
<211> 47
<212> DNA

<213> Artificial

<220>

<223> Primer

<400> 33

aagcttaagc ggccgcagaa ttcgtcgagg gacctaataa cgtatag

47

<210> 34

<211> 44

<212> DNA

<213> Artificial

<220>

<223> Primer

<400> 34

gaattctgcg gccgcttaag cttggaaccc ttaatataac ttcg

44

<210> 35

<211> 21

<212> DNA

<213> Artificial

<220>

<223> Primer

<400> 35

cgcttcacga gattccagca g

21

<210> 36

<211> 55

<212> DNA

<213> Artificial

<220>

<223> CD8 sense

<400> 36

tgctacaact actacatgac ttcaagagag tcatgtagta gttgtagctt ttttg

55

<210> 37

<211> 59

<212> DNA

<213> Artificial

<220>

<223> CD8 antisense

<400> 37

gttacaaaa agctacaact actacatgac tctcttgaag tcatgtagta gttgtagca

59

<210> 38

<211> 55

<212> DNA

<213> Artificial

<220>

<223> CD25 sense

<400> 38

tgcatccacc taatcggctg ttcaagagac agccgattag gtgaatgctt ttttg	55
--	----

<210> 39

<211> 60

<212> DNA

<213> Artificial

<220>

<223> CD25 antisense

<400> 39

gtcaccaaaa aagcattcac ctaatcggct gtctcttgaa cagccgatta ggtgaatgca	60
---	----

<210> 40

<211> 119

<212> DNA

<213> Artificial

<220>

<223> Stem loop sequence

<400> 40

tgctacaact actacatgac ttcaagagag tcatgtcatg tagtagttgt agcttttttg	60
---	----

acgatgttga tgatgtactg aagttctctc agtacatcat caacatcgaa aaaacattg	119
--	-----

<210> 41

<211> 49

<212> DNA

<213> Artificial

<220>

<223> Predicted stem loop

<400> 41

gcuacaacua cuacaugacu ucaagagagu cauguaguag uuguagcuu	49
---	----